Contemporary Psychology

A JOURNAL OF REVIEWS

August 1962
VOLUME VII • NUMBER 8

Page 281 **Psychologist at Large: An Autobiography and Selected Essays of a Distinguished Psychologist,** by E. G. Boring
Reviewed by W. C. H. PRENTICE

282 **Science since Babylon,** by D. J. de Solla Price
Reviewed by E. G. BORING

284 **Studies in Individual Differences: The Search for Intelligence,** by J. J. Jenkins and D. G. Paterson (Eds.)
Reviewed by J. McV. HUNT

285 **Changes in Intelligence Quotient: Infancy to Maturity,** by S. R. Pinneau
Reviewed by D. B. HARRIS

287 **Intelligence and Experience,** by J. McV. Hunt
Reviewed by J. J. CONGER

288 **Brain Mechanisms and Learning: A Symposium,** by A. Fessard, R. W. Gerard, and J. Konorski (Consulting Eds.)
Reviewed by A. H. RIESEN

290 **CP SPEAKS**
By the EDITOR

(Continued on inside cover)

Published by THE AMERICAN PSYCHOLOGICAL ASSOCIATION

Fillmore H. Sanford, Editor
University of Texas

A. A. Lumsdaine, Instructional Media
University of California, Los Angeles

Editorial Consultants

Gordon V. Anderson, *University of Texas*

Peter A. Bertocci, *Boston University*

James E. Birren, *Bethesda, Maryland*

Judson S. Brown, *University of Oregon Medical School*

Roger W. Brown, *Harvard University*

Josef Brožek, *Lehigh University*

Morton Deutsch, *Murray Hill, N. J.*

Frank A. Geldard, *Princeton University*

Edward Girden, *Brooklyn College*

Nicholas Hobbs, *George Peabody College for Teachers*

I. Jay Knopf, *Southwestern Medical School, University of Texas*

Gardner Lindzey, *University of Minnesota*

Douglas McGregor, *Massachusetts Institute of Technology*

Wilbert J. McKeachie, *University of Michigan*

Donald W. MacKinnon, *University of California*

Quinn McNemar, *Stanford University*

Melvin H. Marx, *University of Missouri*

Joseph D. Matarazzo, *University of Oregon Medical School*

Edward J. Murray, *Syracuse University*

Harry J. Older, *Arlington, Virginia*

Victor Raimy, *University of Colorado*

Anne Roe, *Harvard University*

David Ryans, *Santa Monica, California*

Stanley S. Schachter, *Columbia University*

Robert R. Sears, *Stanford University*

Harold Seashore, *New York, N. Y.*

S. Smith Stevens, *Harvard University*

Garth J. Thomas, *University of Illinois*

Benton J. Underwood, *Northwestern University*

S. Rains Wallace, *Hartford, Connecticut*

CONTENTS—*continued*

291 **Les Attitudes,** by H. C. J. Duijker, P. Fraisse, R. Meili, P. Oleron, and J. Paillard
Reviewed by Otto Klineberg

292 **Legal and Criminal Psychology,** by Hans Toch (Ed.)
Reviewed by J. A. Fishman

294 **Working with Groups: The Social Psychology of Discussion and Decision,** by Josephine Klein
Reviewed by Ben Willerman

295 **Psychiatric Social Work: A Transactional Case Book,** by R. R. Grinker, Sr., Helen MacGregor, Kate Selan, Annette Klein and Janet Kohrman
Reviewed by F. H. Kanfer

296 **Adult et infant Devant Dieu: Etudes de Psychologie Religieuse** (French edition)
Child and Adult before God: Thought and Research (English edition), by A. Godin, S. J. (Ed).
Reviewed by W. H. Clark

297 **Shape Discrimination by Animals,** by N. S. Sutherland
Reviewed by C. E. Sherrick Jr.

298 **Variations in Value Orientations,** by Florence Rockwood Kluckhohn and F. L. Strodtbeck, et al
Reviewed by R. K. White

299 **Psychological Anthropology: Approaches to Culture and Personality,** by F. L. K. Hsu. (Ed.)
Reviewed by I. L. Child

300 **La Vision en Lumière Intermittente: Lois et Mechanismes de la Frequence Critiique de Fusion,** by Henri Piéron
Reviewed by S. H. Bartley

301 **Animal Behavior: Its Evolutionary and Neurological Basis,** by V. G. Dethier and Eliot Stellar
Reviewed by Norman Ginsburg

302 **Space and Sight: The Perception of Space and Shape in the Congenitally Blind before and after Operation,** by M. von Senden
Reviewed by Wayne Dennis

303 **Leadership and Interpersonal Behavior,** by Luigi Petrullo and B. M. Bass (Eds.)
Reviewed by Leonard Berkowitz

304 **The Measure of Management Designing Organizations for Human Effectiveness,** by E. D. Chapple and L. R. Sayles
Reviewed by L. B. Barnes

306 **The Psychology of Human Growth and Development,** by W. R. Baller and D. C. Charles
Dynamics of Child Development, by H. B. English
Children and Adolescents: Behavior and Development, by B. R. McCandless
Human Psychological Development, by Elizabeth Lee Vincent and Phyllis C. Martin
Reviewed by Glen Heathers

309 **ON THE OTHER HAND**

311 **List of Books Received**

Books for review, review manuscripts, letters for publication, and correspondence concerning editorial matters should be sent to the Editor, Fillmore H. Sanford, Mezes Hall, University of Texas, Austin 12, Texas.

Films and other instructional materials for review and correspondence concerning instructional media should be sent to A. A. Lumsdaine, School of Education, University of California, 405 Hilgard Ave., Los Angeles 24, Calif.

Helen Orr, Acting Production Manager

Communications concerning subscriptions, change of address, claims for the nonreceipt of a number, advertising, and other business matters should be sent to the American Psychological Association, Inc., 1333 Sixteenth Street, N.W., Washington 6, D. C. Address changes must reach the Subscription Office by the tenth of the month to take effect the following month.

Contemporary Psychology: A Journal of Reviews is published monthly. The subscription per year is $10.00, foreign $10.50, single number $1.00.

Published by the American Psychological Association at 2210 W. Dallas, Houston, Texas and 1333 Sixteenth St., N.W., Washington 6, D. C.

Second-class postage paid at Houston, Texas and at additional mailing offices. Accepted for mailing at special postage rate stated in section 132.122, Postal Manual.

© 1962 by the American Psychological Association, Inc.

Contemporary Psychology

A JOURNAL OF REVIEWS

VOLUME VII | August 1962 | NUMBER 8

Psychologist at Large Who Enlarges Psychology

Edwin G. Boring

Psychologist at Large: An Autobiography and Selected Essays of a Distinguished Psychologist. New York: Basic Books, 1961. Pp. 371. $6.50.

Reviewed by W. C. H. PRENTICE

Edwin G. Boring, here an autobiographical author, is the same Boring psychologists know in so many other roles. A many-faceted man, he can be said to have many biographies, one of which he presents in the present book, and one of which, of somewhat briefer form appears on p. 282 of this issue. The definitive biography, not yet written, will show a greater and more varied influence on psychology and psychologists than has yet been described in detail or definitively assessed, by Boring or anyone else. The reviewer, William C. H. Prentice, who here moves toward such a description and assessment, is presently Dean at Swarthmore College. He took his degree with Boring at Harvard and for a number of years, before being captured for the administrative function, was Professor of Psychology at Swarthmore. His experimental research and his theoretical articles have dealt with basic processes of perception, learning and motivation. Some of his friends doubt, but without evidence, that his active involvement with research will continue at a high level of productivity after he becomes President of Wheaton College.

EDWIN G. BORING

NO PSYCHOLOGIST is better known to the readers of these pages than Edwin G. Boring. *CP* is his creation. Indeed, a good many pages in his new book first appeared here. The book is a combination of autobiography and selected essays covering a long life and a varied career, and also covering an enormous range of ideas in psychology. One cannot do justice to it in a short review, because each article cries out for separate discussion. Boring has never hesitated to take his stand on issues of controversy, whether they have to do with basic philosophical decisions, as in the case of freedom versus determinism, or with practical problems of administering psychology's contribution to society, as in his discussions of "the woman problem" in psychology. He hardly ever writes without stirring his readers to defend or abandon some of their preconceptions.

This book contains much history and much psychology. It also contains other things. Boring on style, for example. No one who has read *CP* over the years can have failed to know of his interest in stylistic matters. Perhaps only a few readers, relatively speaking, will have had a chance to sample the Boring style so widely as they can in this book. No one can doubt that he is one of the most effective users of the English language in our profession. No doubt he works hard at producing the sentences and paragraphs that read so well, but very little of the effort of writing is apparent to the reader. It is not just that Boring is clear, though he almost invariably is, but he writes with force and variety. Reading most of the chapters in this book is a positive pleasure, even where the specific content may be of only peripheral interest to the particular reader. Boring's own comments on good writing will be of interest to those who have read the first several hundred pages and wondered how he does it.

Boring is perhaps best on biography and history. His writings about his own development in psychology and those relating to Titchener and Terman rep-

resent three very different kinds of people and three very different kinds of approach in scientific biography. They are all valuable and stimulating. It is unfortunate that still more of Boring's many appreciations and obituaries were not included.

BORING is an interesting example of a man whose major contributions have been historical, biographical, editorial, and administrative despite his very keen scientific interest and his devotion to experimental procedures. One's life history often operates in strange ways to divorce one from the very things that are ideally central, and the reader can hardly escape the feeling that Boring might have been happier to spend more time in the laboratory and more time with the kind of theoretical writing and thinking that produced *The Physical Dimensions of Consciousness* in 1933.

Whatever might have been, Boring's has been a full and important life spanning a period in which psychology has developed and changed almost incredibly. Very few of the remarkable changes in the science and profession of psychology are wholly without his imprint, and he has written a book which records a good many of his contributions and makes it possible for the reader to see how still others were affected.

It must have been difficult to make a selection for this volume from Boring's numerous writings. He has chosen such favorites of his own as the 1920 paper on "The Logic of the Normal Law of Error," surely a topic of continuing importance and interest, and one that it would have been unfortunate to lose. He has also included discussions of the determination of human behavior, in history and in the individual case, another recurring theme throughout his professional life and one that surely needed to be represented in a book like this one. It is less clear why the papers on "The Moon Illusion" should have been chosen instead of other experimental studies, particularly since recent doubt has been cast on what we had all hoped was a genuine solution to the ancient problem. No one will doubt that Boring's discussion of his psychoanalysis belongs in an autobiographical volume. It is frank and sensitive and shrewd, and it illuminates the basic issues of analytical psychotherapy in an unusual way. By far the largest single part of the present book is devoted to the 80-page biographical section, part old, part new. It is hard to know how to criticize autobiography. Is this the full picture of the way Boring perceives Boring? Certainly it is a readable and intensely interesting account of a man. A reader who feels that he knows something of the author, but misses in the autobiography some things he considers important, finds himself at a loss. Surely no facts belong in the account unless they are part of Boring's own view of himself, for that would make them biography rather than autobiography.

No reviewer need have any hesitation in urging psychologists to read this book. It is at once a sampling of some of the most important psychological history of the past fifty years and a sparkling compendium of the writings of an outstanding contributor to the science of psychology.

Why Science Was What It Was

Derek J. de Solla Price

Science since Babylon. New Haven, Conn.: Yale University Press, 1961. Pp. xi + 149. $4.50.

Reviewed by EDWIN G. BORING

The author, Derek de Solla Price, is Professor of the History of Science at Yale University. He received his doctoral degree in Physics from the University of London in 1946 and another, eight years later, in the History of Science from Cambridge. He has published a good deal of research in physics and a great deal more in the history of science. His long and distinguished list of books and articles cover topics ranging from Chaucer's Astronomy to armillary spheres, to Chinese astronomical clockwork, to humor created by scientists. Before coming to Yale in 1959 he was Donaldson Fellow at the Institute for Advanced Study at Princeton. The reviewer, Edwin G. Boring, psychologist at large, views this Yale production from a Harvard position, which in one form or another he has held for 40 years. Few will fail to agree that, among other things he is psychology's greatest historian and its leading sociologist of knowledge. He is the father of CP, *the molder of its spirit, its only past editor and now its best friend, although he has not yet agreed to carry out the suggestion, advanced by a number of* CP's *readers, that he write all of its reviews.*

A VIVID, enthusiastic, original, and altogether charming book this, not a history of science, for the author makes no claim to such broad uninterrupted erudition, but a cruise among five islands where the author's interest is intense, his expertise unquestionable, and his originality and personal historical discovery more than once in evidence. These five areas of his choice are: (1) the contrast between the dull arithmetic Babylonian mind and the penetrating geometric Hellenic mind; (2) the ultimate influence of mechanical ingenuity from ancient China and Greece upon western science; (3) the continuity of science from Greece right up to the current phase of the scientific explosion; (4) the mutations that occur within developing science in spite of its continuity; and (5) the carcinomatoid growth of science. Let us skip the second topic with its fascinating account of how Price reconstructed the complicated Greek machine for predicting planetary motions after it

had lain on the floor of the Mediterranean for 2000 years, an intellectual feat that casts doubt on the generally accepted belief that the Greeks disparaged mechanical ingenuity; but let us say something about the other four.

Current interest in the space age is nothing more than the latest phase of man's age-old concern with the heavens, for no science is so ancient as astronomy, and no objects have been more deeply implicated than the planets in human weal and woe. One of man's earliest needs for security lay in his ability to predict the positions of the planets as against his own intended enterprises. The Babylonians did it by arithmetic. They had all the figures and constants worked out in enormous elaboration and a good job it was. You could tell when to start the next war or when to plant your grain. This is the *what* of the planets, as Price calls it. You know *what* they will do, but not *why*. The *why* was to be worked out by Ptolemy in the *Alamgest* and it was effective too. The Hellenic mind looked for generalities and what nowadays we call models, and Ptolemy had good visualizable models in his somewhat eccentric circular orbits. Later Islam, by translating Arabic into Latin, brought the Babylonian culture west so that the two influences could reinforce each other. That is where modern western science came from and *why* it is so effective.

The psychologists, who not so many years ago were all talking about Aristotelean and Galilean thinking, might well find use nowadays for these terms *Babylonian* and *Hellenic*. The computers, the mathematiphiles, the standard statisticians, and certainly the factor analysts who analyze with no control experiments are psychology's Babylonians, whereas those who mistrust the rigidities of statistics and look for the broad experimental generalization—the B. F. Skinners, for example—are thinking in the Hellenic mode. Perhaps Anne Roe (whom Price cites) might properly call the verbally minded sociotropes Babylonian and the visualizing biotropes Hellenic. Price must think that science needs both types, but it is plain he thinks that the Hellenic mind is grander.

When Price asks for *why* in addition to *what*, he is asking for continuity. He is saying that in a deterministic world one *what* must issue from a preceding *what*, and that these dynamically caused sequences are the *whys* of history. The development from Ptolemy through Francis Bacon, Kepler (he skips Kepler but ought to have him in), Galileo, Newton, and so on down the familiar line is continuous, set in amongst hundreds of lesser scientists who belong to the evolving history but who, because of their abundance, escape attention by the mind of him who tries to view the process whole.

WHY THEN does one name these Great Men, if they are only the effects of their causes as they are also the causes of their effects? Partly because they wrote big books, often after a lifetime spent in accumulating the wisdom that the books contain, and also because such a book cancels out from historical memory all the lesser works that went before it and that made the big one possible. Partly also because man thinks eponymously; he likes heroes and besides, for the economy of his thinking, he must telescope history into a limited number of blocks. And partly because the habit of thinking that the history of achievement "is at bottom the history of the Great Men who have worked here" (Carlyle's phrase) is so well entrenched that conventional thinking is not easily changed. Price cites de Tocqueville as having said that the historian focuses on heroes and leaders in an age of aristocracy but on the whole social process when democracy prevails. One might add that the deterministic scientist, in viewing history, is also bound to favor attention to the social process, for the Great-Man theory of progress is apt to include the originality of the *homo crucis* as a factor in achievement, whereas *originality* is but little more than a cloak for an ignorance of the casual factors that are secretly at work.

Price does not say that there are no Great Men in science. He fails, it seems to this reviewer, to rid himself wholly of the eponymous delusion. He does certainly insist on there being Great Events and in this respect he is, of course, right. Things run along in what posterity will consider to have been a humdrum manner, and then suddenly there is a great discovery, like Roentgen and X-rays, or Becquerel and radioactivity, and away things go with almost every laboratory of physics in the world playing with the new phenomena. Or the discovery is not something sudden but the outcome of a long development in the intercommunication of many men, although especially in the mind of one man, a deliberation that ends in a promulgation, like Darwin's, one that sets the world on edge and changes thinking forever after. It is the naming of these Great Mutations after the men who officiated at their emergences that has made the Great-Man theory so plausible.

Price's last chapter, "Diseases of Science," might have been called "Scientific Carcinoma." He counts the multiplication of scientific journals. The first journal that has persisted longest is the *Philosophical Transactions*, from 1665. By 1750 there were ten scientific journals in Europe, and from that point multiplication kept on exponentially, doubling every 15 years, 100-fold every century. America, starting about 1800 and working upon a vacuum, has doubled every 10 years, Russia from 1918 on and with a bigger initial vacuum, every 7 years, China perhaps every 5 years. It is interest compounding. Nobody, Price suggests, cheated the Indians when Manhattan Island was sold. Had the Indians invested the money at compound interest they could have afforded to buy the Island back now at current prices.

If you count abstracts of scientific articles and call every man who writes one article a scientist, then there are about one-third as many scientists as papers, since the average publication is three per writer. It is clear that exponential expansion has sometime to stop. Eventually there would be more scientists than persons in the world. Only a few years back extrapolation showed that membership in the American Psychological Association, expanding at 10% per annum since 1892, would in the year 2100 equal the population of the world at 10,500,000,000,

but now word has come from Washington that the inexorable 10% has at last been mitigated. So it will be with the scientists in general and with the journals. When articles printed can no longer be read by any sizeable public, publication ceases *ipso facto*. No one has to make a decision. Social dynamics are bound to accept a Malthusian impediment, as indeed is already evident in the doubling, tripling, and quintupling of authorships in the articles that make up current science.

There is ever so much more in this fascinating book. Do get hold of it—or even buy it!

Traditional Intelligence Since Galton

James J. Jenkins and **Donald G. Paterson** (Eds.)

Studies in Individual Differences: The Search for Intelligence. New York: Appleton-Century-Crofts, 1961. Pp. v + 774. $8.50.

Reviewed by J. McV. Hunt

Both editors, James J. Jenkins and the late Donald Paterson, are strongly associated in many minds with the University of Minnesota and "The Minnesota point of view." Jenkins took both his master's and doctoral degrees with Paterson there and has stayed there, except for a year at the Center for Advanced Study in the Behavioral Sciences, ever since. His prime current interest centers on language, but his expertness in the area of individual differences is indicated by his chapter on the subject in the 1957 Annual Review of Psychology. *The late Donald Paterson (1892-1961) came to Minnesota in 1921, after a period of psychological work in the army during World War I and a short term as a member of what was probably the first firm of psychological consultants. During the next 39 years he published 300 articles and books dealing with a great variety of research, mostly in what is regarded as the area of applied psychology. He had great capacity to inspire—and give—loyalty in his relation with the 300 students who took their master's degree with him and the 88 who worked with him on their doctorates. J. McVicker Hunt, the reviewer, is Professor of Psychology and Coordinator of Clinical Training at the University of Illinois. He is perhaps best known in the scholarly realm for the 1944 book* Personality and the Behavior Disorders *for which he was editor and contributor. He is also known as past president of APA (1952), a past editor (1950-55) of* The Journal of Abnormal and Social Psychology *and, presently, as one of the most enthusiastic and perhaps the best barbershop tenors among distinguished psychologists. Of more relevance for his production of this review is his long fascination with the effects of early experience, which led to his classic research on feeding frustration in young rats as it affected later hoarding behavior, and on—and upward—to his recent volume,* Intelligence and Experience, *reviewed on page 287.*

It was the belief that "at least three requisite things—good psychological judgment, an elusive quality called perspective, and a grasp of the strategies of psychological measurement—are fostered most rapidly when students encounter original research papers in their historical sequence" which prompted the editors to prepare this anthology. It was the vital importance of the issues in practical situations and the fact that few laymen remain untouched by what the psychologist does in this domain that led them to choose "the search for intelligence" as the kind of model problem they wanted to illustrate.

The 774 pages contain a collection of 66 valuable papers arranged in order of their date of publication. The story begins in 1869 with the third chapter of Galton's *Hereditary Genius* which contains his classic argument for classifying men according to their "natural gifts." It ends in 1959 with Guilford's *Three Faces of Intellect*. The 64 papers between these include 13 on the relative importance of heredity and environment, 12 on the structure of intellect, 12 on various group differences (six of them on race differences), six on trait correlates of intelligence-test scores, six on changes in test performance with maturity, four on the development of intelligence in children (one being 20 pages of translated abridgments of the classic papers on the development of the Binet and Simon scales), four on anomalies, three on statistical methodology (including Galton's (1888) classic paper on *Co-relations and their Measurements*), three on the military experience with tests, and Boring's (1923) popular interpretation of *Intelligence as the Tests Test It*. It is a fine thing to have this anthology of excellent papers made readily available to students and faculty.

But how well have the editors achieved their stated goal? Firsthand acquaintance with these papers should indeed help foster "good psychological judgment," and also "a grasp of (at least the traditional) strategies of psychological measurement." But what of the third goal, "perspective?" Through these papers the student can indeed acquire the perspective of the traditional student of individual differences. But is this perspective adequate, either on the historical side or on the side of contemporary work?

On the historical side, missing is the tie between Galton's faith in "hereditary genius" and the theory of evolution formulated by his older and then much more prestigious cousin Charles Darwin. Darwin's (1859) *Origin of the Species* was 10 years old when Galton wrote his *Hereditary Genius*. Missing is any selection to show Binet's faith in the possibility of cultivating the development of intelligence in the young. Missing also is any reference to work in genetics by Johannsen (1903). Had psychologists grasped his distinction between the genotype and the phenotype, the nature of the debate about and the questions asked concern-

ing heredity and environment would have been very different.

On the side of recent contributions, particularly those calling for changes in our conception of intelligence, no place is given to several developments which appear to this reviewer to have key significance. Missing is any mention of Hebb's (1942) discovery of the differing effects of early and late brain injury on the nature of adult intelligence. Early brain-injury results in low mental age with the mental age from performance tests above that on vocabulary and verbal tests while late brain-injury results in wide scatter with mental age from performance tests low and mental age from vocabularly and verbal tests high, sometimes well above average. This was one of the categories of fact that prompted Hebb (1949) to formulate his highly seminal conception of brain function. Missing is any mention of the work on the effects of deprivations and enrichments of experience during infancy in various animals on their problem-solving in adulthood. Missing is any mention of the manner in which the experience of programing electronic computers is changing our picture of brain functioning, and, with it, our conception of the nature of intellectual functioning. Missing are the important papers of Ferguson (1954, 1956), which relate the structure of human abilities to learning and the transfer of training. Missing, finally, is any mention of the important observations made by Piaget and his collaborators in Geneva on intellectual development in infants and children. These have implications of great significance for both the theory of the development of intelligence and the technique of assessing intelligence.

While this is a valuable anthology, it hardly reflects adequately the historical roots of the search for intelligence, and it does not bring the search up to date. It reflects well the perspective of the traditional student of individual differences.

To answer the question posed about the adequacy of this perspective: it is inadequate to yield a conception of the nature of intelligence which will lead to or foster the development of improved child-rearing and educational practices. With western culture growing more and more technological and therewith demanding that a higher and higher proportion of people have the capacity to deal with symbols and to solve symbolic problems, this inadequacy is of practical as well as academic or theoretical consequence. Like Greek medicine, which failed (even though it achieved a scientific method) because it lacked the perspective of the biological and physical sciences, the traditional scope of the student of individual differences needs to be broadened in the search for intelligence. Nevertheless, it should be repeated, this is a valuable anthology. It will be useful. For it to have followed the suggestions made here might have required a volume unduly large. Perhaps it is unfair to criticize anthologists for failing to broaden the traditional perspective of their domain.

Traditional Intelligence and its Changes

Samuel R. Pinneau

Changes in Intelligence Quotient: Infancy to Maturity. Boston: Houghton Mifflin Co., 1961. Pp. iv + 233. $4.60.

Reviewed by DALE B. HARRIS

The author, Samuel R. Pinneau, was recently Associate Professor of Psychology at the University of Houston. He is best known for his research on the physical and mental development of children and for his vigorous criticism of the controversial research on deprivation in infancy. By the time this review appears he will be Administrator of the Child Study Center at San Fernando Valley State College, California. Dale B. Harris, the reviewer, is professor of Psychology at Pennsylvania State University. He moved east in 1959 after a seventeen year association with the University of Minnesota where his role varied from that of a graduate student to that of John Anderson's successor as Director of the Institute for Child Development. He has a new book in the works, one that deals with a revised Goodenough Draw-a-Man scale and with the significance of children's drawings in the study of mental growth.

PINNEAU'S volume is a useful addition to the literature on psychology's most widely known concept and tool. It admits and documents the mutability of intelligence as measured by a single index—IQ. It goes some small way behind the index to examine the composition of intelligence, developmentally considered. It offers the working psychologist new tables for his armamentarium of manuals and norms. Because the monograph treats intelligence as a built-in aspect of the organism, it belongs in the older tradition (and an honorable one it is) of the intelligence concept. It discusses the "prediction" of intellectual growth from earlier status and charts the course of such growth, regardless of schedules of reinforcement, programs of learning, or patterns of experience. The research reported here shows how even the most extensively developed concepts and instruments can be tightened by painstaking conceptual and statistical treatment.

The major part of this report is based on data from Nancy Bayley's Growth Study at the University of California's Institute of Child Welfare, now the Institute of Human Development. Only a small number of cases were involved (36 to 61) depending on the test comparisons made,) but they were the same individuals retested periodically from infancy to maturity. While the N was small, the fact that the study was truly longitudinal enhances its value for the study of the consistency of the IQ over time.

The study shows IQ changes across any stipulated period of childhood in two ways. Pinneau calculated the intercorrelations between IQ's for all ages for the BGS sample. But he also took the next step, possible only with "clean" longitudinal data. He transformed his data to standard scores, or in his terms, "Deviation IQ's," retaining a theoretical mean of 100 and standard deviation of 16. Then, for both conventional and deviation IQ scores, he noted the actual changes, case by case, between each year, and all succeeding years. Comparing his data with Bradway's work on the Stanford-Binet standardization samples, Pinneau concluded that values tabled from the Berkeley Growth Study can be used, with caution, to estimate the amount of change one may generally expect in IQ from any age to any other age. Pinneau showed that changes are appreciably smaller when Deviation IQ's are used; test mechanics in part account for some of the variation in conventional IQ's.

The usefulness of the prediction tables depends on one's framework of thinking concerning the measurement of intelligence and his understanding of the logic of probability. These tables essentially assume a conventional definition of intelligence and its measurement and will appear most useful to those who define intelligence as a relatively fixed entity or stable quality of behavior. If we believe intelligence tests are achievement tests rather than estimates of aptitude, and if we believe the course of intellectual development can be closely regulated by controlling experience input, such tables have little value. Since the definition of intellectual development just implied is still undemonstrated empirically, the means of manipulating mental growth still largely undescribed, and the parameters of such induced change quite unknown, this reviewer believes Pinneau's tables may be used for some years at least!

The second major contribution is a set of tables for Deviation IQ's for the 1960 revision of the Stanford-Binet tests, based on data provided by that revision. Pinneau has shown that McNemar's corrections in the 1937 revision for irregular variability from age to age were justified but did not go far enough. He offers evidence that the increasing reliability of the IQ at the older ages is largely a function of the decline with age in the rate of mental growth from birth to maturity and does not occur because of more inherently stable performances at those ages or the type of test material used in the tests at the upper ages.

While Pinneau has in effect conceded Wechsler's point on the usefulness of a relative measure of brightness, he seeks to preserve the mental age concept as a measure of mental *level*. Relative measures are most useful after growth changes, substantially related to age (or to experience factors of which age is a convenient measure), have become minimal. Pinneau has a point, as all who work with children know. He does, however, admit that mental age units cannot be considered equivalent throughout the scale, either quantitatively or qualitatively.

The third significant contribution of this monograph is theoretical, bearing on the nature of mental growth. John E. Anderson pointed out years ago that children may show a relatively stable IQ, even though increments in their mental growth are random in character from year to year. That is, the constancy of the intelligence quotient is in large measure a matter of the part-whole or overlap relation, because the individual never loses what he has already gained, but adds to it. Pinneau considers, however, that the present study does not support a theory of random increments. Bright children consistently make larger gains than do average children from year to year. Moreover, as they grow older their conventional IQ scores become less stable than are those of children with lesser ability in the same age groups. By a careful analysis of standardization data Pinneau shows that this instability results from increased weighting given items at later ages as compared with earlier mental ages (on which brighter children achieve their higher scores), as well as from age changes in the means and standard deviations of the conventional IQ.

The latter part of the book contains a number of useful suggestions for practical interpretations of intelligence test scores, as well as guides for interpreting the tables Pinneau has provided for the new Stanford-Binet. The practioner should keep these tables with his test manual and will find Pinneau's suggestions helpful. However, these materials cannot possibly substitute for a fundamental understanding of the statistical thinking involved in averages and standard deviations.

Until we have more adequate and well-standardized differential tests that are suitable for children, and until professionals who use test results are considerably more knowledgable about statistics, the Binet will continue to be used as a general measure. It remains one of psychology's great achievements and promises to bear up under another generation of criticism.

Our ways have been changed not only by technology but by the new images of living that technology has made possible. Yet our taming of fate and our skills in the management of enterprises has created malaise. We hear much of the search for identity. There has developed a wide disparity between our sense of what is possible and the private ways in which we live our immediate lives. The impact of the century has been powerfully and irreversibly energizing—but the sense of effectiveness, that resultant term in my mock formula for the relation of potency and fate, has not been given its full chance for expression. What we have now is a new frontier, a frontier for the full use of human beings. Perhaps I reveal my biases as a psychologist when I say that the cultivation of this frontier excites me far more than the prospects of exploring empty space.

—Jerome S. Bruner
On Knowing

Non-Traditional Intelligence and Its Processes

J. McV. Hunt

Intelligence and Experience. New York: Ronald Press, 1961. Pp. ix + 416. $8.00.

Reviewed by JOHN J. CONGER

JOSEPH MCVICKERS HUNT

J. McVicker Hunt, has the same biography as an author as he has as a reviewer. It is sketched on p. 284. The reviewer, John Conger, is located at the University of Colorado School of Medicine where he is Professor of Psychology, Head of the Division of Clinical Psychology and Acting Associate Dean. His curiosity, both as a psychologist and as the father of two sons, has long focussed on personality development in children. Currently his research is concerned primarily with the early identification of disturbed behavior, including delinquency, emotional disorders and susceptibility to accidents. With Paul Mussen and Jerome Kagan he is co-author of Childhood Development and Personality (CP, *Nov. 1956, 1, 327), a second edition of which Harpers will publish in 1963.*

OUR CONCEPTIONS of the nature of intelligence have recently been subjected to a number of 'agonizing reappraisals.' Seldom, however, has the task been approached as thoroughly —and as thoughtfully—as Professor Hunt has done in this book.

From the turn of the 20th century through World War II, intelligence was generally viewed as an 'inherited capacity,' measurable through behavior. Hunt attributes this notion primarily to two assumptions—"fixed intelligence" and "predetermined development." The former is seen as having its roots in Darwin's theory of natural selection, with its emphasis on the role of genetic mutation in producing characteristics having increased survival value. When applied to mental functioning, the theory led to a conception of intelligence as a "basic and fixed dimension of personality."

Hunt views the related assumption of predetermined development as having gained a foothold when, in the latter half of the 18th century, the Russian investigator, D. F. Wolff marshalled his evidence for epigenesis of body structures in the embryological development of the chicken egg. The assumption received further support from the theory of natural selection and from the notion that "otogeny recapitulates phylogeny."

In America, acceptance of the concept of predetermined development, and its specific application to mental functioning, was greatly aided by the personal intellectual influence of G. Stanley Hall, whose aim it was to become "the Darwin of the mind." It is probably not surprising that Hall numbered among his students such men as Gesell, Goddard, and Terman.

The author carefully reviews the evidence for and against the assumptions of fixed intelligence and predetermined development. While he presents the data impartially, he concludes that in the battle between nature and nurture, support for the latter has been both too little and too late. This does not mean, however, that he denies the importance of genetic factors in determining intelligence. As he says, "It is obvious that the genes operate both to prescribe certain basic directions in organismic development and to set irrevocable limits on the range of operations that can be developed within an organism."

What Hunt objects to is the contention that intelligent behavior is a direct function of genetic endowment and physical maturation. Not only does he consider this view to be unsupported by recent evidence; he also feels strongly that it has had a number of unfortunate consequences. It led, for example, to the concept of the constant IQ, with a subsequent overemphasis on measurement and prediction, and an undue preoccupation with the problems of eugenics, at the expense of euthenics. It also discouraged investigation of the *processes* involved in intellectual functioning and in the development of intelligent behavior.

IT IS primarily to a consideration of this last matter that the author devotes the remainder of his book. And it is here that his enthusiasm and sense of personal excitement become most apparent. Hunt believes that an adequate conceptualization of intelligence must involve the principle of a complex, continuing *interaction* between the organism and its environment, as well as a greater emphasis on "semi-autonomous central processes that intervene between receptor inputs and motor outputs." Consequently, theories which emphasize only the automatic unfolding of response patterns are of limited value.

On the other hand, learning theory provided little assistance either, so long as it viewed the organism—once so full of traditional mental faculties—as "a mere switchboard connection between afferent processes, arising from stimuli, and efferent processes, observed as responses."

Of course, this latter situation did not persist for long. Psychologists began producing evidence that required the postulation of various intervening processes between stimulus and response. There resulted the symbolic processes of Hunter, the intervening variables of Tolman, the "pure stimulus act" of Hull, the response-produced drives and cues of Dollard and Miller, and the mediational responses of Osgood. Even in these instances, however, Hunt feels that too great an emphasis was placed on tying the variable directly to both its roots in present experience and its manifestations in overt behavior, with too little emphasis on the nature of central processes as such.

He sees great promise, however, that a number of recent developments in neuropsychology, electronic computer programing, and learning-set theory, as well as Piaget's work on the growth of adaptive ability in children, will all contribute substantially to an adequate conceptualization of intellectual development and functioning.

These developments suggest to Hunt that intelligence should be conceived as based on "hierarchically arranged central processes," functioning in much the same manner as the strategies for information-processing programed into computers. Furthermore, he cites the work of Hebb, Pribram, and others to suggest that neurophysiologically these processes may be centered in regions of the brain not immediately concerned with receptor inputs and motor outputs; and that their initial development and subsequent capacity to function may be strongly influenced by very early "primary" learning.

In the reviewer's opinion, there is considerably greater room for controversy in this latter section of the book. A number of Hunt's formulations here are admittedly speculative, and individual readers may be expected to disagree with one or another of his interpretations. Where they do, however, it will not be because the material is superficially handled.

On the contrary, the book as a whole is thoughtful, embraces a wide range of theoretical and empirical material, and is well-organized and clearly written.

This volume appears at a most appropriate time. While demands for highly trained, creative minds are constantly increasing, the market for unskilled or poorly trained workers is dropping rapidly—due largely to the impact of automation. The only apparent solution to this problem appears to lie in an over-all elevation in the intellectual effectiveness of our citizens.

Is this a forlorn hope? Hunt is convinced that it is not. In his opinion, even such embryonic evidence as we now have strongly suggests that proper 'matching' of the child and his environmental encounters may produce remarkable gains in intellectual capability. He admits that much further research remains to be done, and that even when the necessary knowledge is available, it will require Herculean efforts to effect indicated changes in our child-rearing and educational practices. Nevertheless, he feels that the job can and must be done. We may well hope that he is right.

Nervous Systems in Montevideo

A. Fessard, R. W. Gerard, and J. Konorski (Consulting Eds.)

J. F. Delafresnaye, Editor for the Council for International Organizations of Medical Sciences.

Brain Mechanisms and Learning: A Symposium. Springfield, Ill.: Charles C Thomas, 1961. Pp. xiv + 702. $15.00.

Reviewed by AUSTIN H. RIESEN

The three consulting editors of the present volume, A. Fessard, R. W. Gerard and J. Konorski, are all neurophysiologists and also are all contributors to the volume about which they consulted editorially. Fessard came to the Montevideo Symposium from Paris, Gerard from Ann Arbor, Michigan, and Konorski from Warsaw. Austin H. Riesen, the reviewer, is Professor of Psychology at the University of Chicago where he does research and teaching in sensory and perceptual processes, development, and learning. Before coming to Chicago he spent ten years with H. W. Nissen at Yale and at the Yerkes Laboratories in Florida. The interest he finds most resistant to extinction concerns the perceptual development of animals, including the human one, under varying conditions of visual stimulation, including the lack of any of it. In 1962, following the alleged western movement of culture, or perhaps simply seeking a different climate, he will go to the University of California at Riverside.

PSYCHOLOGISTS, all of them American, interact with an international group of physiologists, neuroanatomists, and zoologists, in this exceedingly well reported symposium. Lively discussions given after each chapter reveal issues regarding fact and theory. Hebb is the most vocal of the four psychologists. Chow, Olds, and Rosvold (the last two with joint authors who were not present in Montevideo) each contribute behavioral data from animal learning laboratories in the United States. Specialists in the conditioned reflex, electrophysiologists, ethologists, and neuroanatomists all show overlapping knowledge of each others' techniques in varying degrees and combinations. Thirty chapters, for the most part concisely written to spare time and space for discussion, bring together much of

the recent work on behavioral, electrophysiological, and anatomical studies of brain and learning relationships.

This symposium does not pretend to be encyclopedic in its coverage. It is not a good textbook, but is certainly excellent seminar reading. The historical chapter by Magoun sets the stage for this group to bring up many topics pertaining to genetic and developmental "memory." The locus of fixation is given more treatment than is the question of its physical and functional nature. The reverberating circuits of recent memories for spatial location are placed by Jerzy Konorski in the prefrontal area and its connections, at least for monkey and dog. Hebb has partially reversed himself from his earlier view that recent memory must be reverberatory. Evidence of the persistence of such experience in the face of competing demands for the incorporation of the same new responses into many serial behaviors convinces him that a partially structural basis for transient memories is the more realistic conception. Several of the neurophysiologists, including Eccles, support the general conception of Hebb, as he phrased it in 1949: ". . . a reverberatory trace might co-operate with the structural change, and carry the memory until the growth change is made." (p. 62, in *Organization of Behavior.*)

For the psychologist or physiologist who still finds himself constrained by a view of the neural substate in the brain as a complicated series of arcs and closed loops, conducting impulses uni-directionally along well insulated axons, the remarkably illustrated chapter by C. Estable may serve to free the shackles. Fine and ultra-fine histological preparations reveal new possibilities in the functional contacts of neurons. In addition to the classical axo-dendritic synaptic contacts, Estable shows interneuronal structures that provide intimate contact and would permit axo-axonic, dendro-dendritic, dendro-somatic, somato-somatic transmission. Some of these morphological relations suggest that conduction could occur in either direction. In the discussion of this paper Eccles suggested that these several types of contact may explain physiological reactions not otherwise yet understood. He expressed the need for "functional and pharmacological investigations" to help interpret the significance of the morphological information. But in his own chapter Eccles returns to the more familiar approach for the study of simpler synaptic activity in the spinal cord. Disuse and excessive use of synapses, and especially the latter, are demonstrated to have an effect on the excitability of monosynaptic reflexes.

Empirical studies of learning usually implicate some motivational factor. In the electrophysiological studies reported in this volume the exploration of reticular formation, hippocampus, limbic system, or hypothalamic participation would be probing the substrate of the drive or reward aspects of psychological experiments. Much excellent evidence confirms the contribution and the modifiability during conditioning of these subcortical systems. The *direction* of modifiability, whether toward so-called desynchronization of electrical activity or the reverse, is repeatedly found to be altered in mid-stream. Often the end-result is that activity in a given system returns to the pre-learning level when learning is complete. While this generalization oversimplifies the picture somewhat, it does suggest that learning may in the last analysis merely be facilitated by mid-brain, thalamic, or paleocortical systems, whereas storage of well-fixed behavior may reside at the level of cortical "gray matter."

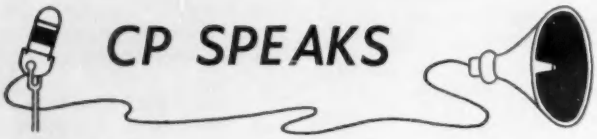
The establishment of conditioning with minimum or no participation of subcortical centers is the object of studies reported by R. W. Doty and C. Giurgea. By coupling electrical excitation of two cortical areas, much as Loucks did with negative results nearly 30 years ago, but with longer inter-trial intervals, these workers succeeded repeatedly with dogs, cats, or monkeys in developing conditioned motor responses when the unconditioned stimulus was electrical stimulation in the motor cortex. Behaviorally, Doty indicated in discussion, the limb movements appear the same as are induced by normal external stimulation. The Russians approved of this support. In the words of Anokhin (p. 149) the experiments demonstrate again ". . . the brain tissue's ability to act as a specialized substratum, and to establish instant links between any two stimuli which affect it simultaneously." J. P. Segundo confirmed the absence of arousal in stimulation of motor cortex. Edward C. Tolman would have been gleeful to see this evidence that autonomic responses are unnecessary complications in the study of behavioral modification, much as they may also be of fundamental interest in their own right when they do participate.

THERE are fascinating studies, written in English and in French, of conditioned synchronization of the EEG and of conditioned desynchronization. Interhemispheric relations are worked out. Frontal and temporal lobe functions in discrimination learning are documented by psychologists and doubted by physiologists. Space does not permit the revelation here of the many lines of evidence that converged or failed to converge in exciting fashion as Australian, European, South American, and North American workers were inspired to add data in discussion. Some of the studies were interesting extensions of the type of experimentation reported in the Laurentian symposium six years earlier on "Brain Mechanisms and Consciousness."

The conjectures, in the absence of direct evidence, that were expressed regarding underlying structural bases for learning covered the following possibilities: synaptic morphological alterations of grosser spatial juxtaposition, structural alteration or distribution of RNA, phospholipid or protein arrangements, including possible alterations in the machinery for their production, and an electrochemical 'protracted tetanic potentiation.' It was generally recognized and explicitly stated by several contributors that these were not mutually exclusive possibilities.

First of all, we ought to observe, that mathematical propositions, properly so called, are always judgments a priori, *and not empirical, because they carry along with them necessity, which can never be deduced from experience. If people should object to this, I am quite willing to confine my statements to pure mathematics, the very concept of which implies that it does not contain empirical, but only pure knowledge* a priori.

—IMMANUEL KANT



New Publishing Venture

In one way and degree or another, *CP* and its readers are affected by many events in the world of publishing. Mergers, shifts in policy, changes in staff, perhaps even the momentary state of a psychology editor's physiology can determine what books are published, when, in what manner and by whom.

There are three recent developments that have come to *CP*'s attention and that are certain to bear on what is written and read by psychologists.

In the summer of 1961, the Atherton Press came into existence as an autonomous, independently budgeted division of Prentice-Hall. With Allen Jossey-Bass as Director and Editor, Atherton is now seeking, finding and processing manuscripts it hopes will be of interest to scholars and scientists in the behavioral sciences. Mr. Jossey-Bass reports that the Atherton Press has a preference and a hope for books with an interdisciplinary appeal. William Henry, of the University of Chicago, is Atherton's general editor for psychology.

The summer of 1961 also saw the birth of a collaborative venture in which Wiley and Basic Books, under the name of Science Editions, Inc., will produce paperback books, both original and reprinted, in the behavioral, physical, life and, ultimately, in engineering sciences. The first 20 volumes produced include ten in the area of behavioral science, of which seven, six or five, depending on the exclusiveness of definition, fall within the psychological field. These include Donald Hebb's *The Organization of Behavior*, David Rapoport's *Emotions and Memory* and Heinz Werner's *Comparative Psychology of Mental Development*.

News of a third and more recent undertaking comes from Stanford University Press. There will be a new series of annual volumes, beginning in 1963, entitled *Studies in Mathematical Psychology*. These volumes, the plan is, will contain papers, both theoretical and theoretically oriented experimental studies, that are too long for publication in existing journals and too short to be published as separate books. The emphasis will be on mathematical developments wherever they may occur in psychology. The editor of the series is R. C. Atkinson of Stanford University. His editorial board includes R. R. Bush, Clyde Coombs, W. K. Estes, R. D. Luce, W. J. McGill, George Miller and Patrick Suppes. It is predictable that the forthcoming volumes in this series will represent trouble for *CP*. Collections of articles, symposia, annual reviews and other collections and collations are often very difficult to review. Potential reviewers know it, and are reluctant to try. So there will be trouble, but very probably of a high quality.

Useful Books Not Reviewed

There are a number of ways an author can avoid a full *CP* review of his book. One of the best and most regrettable ways is to produce a book that is of obvious value to psychologists but about which very few meaningful sentences can be composed. Quinn McNemar has encountered such a book and, at the editor's request, prepared the following paragraph designed to give the book more visibility than it would have were it merely listed and left alone.

Those pursuers of nonparametric statistics who think they have captured everything that has appeared on the topic will wish to acquire and peruse the 3000 entries in Professor I. Richard Savage's *Bibliography of Nonparametric Statistics* (Cambridge, Mass.: Harvard University Press, 1962. Pp. 284. $6.50). Such an exhaustive listing, with some notes and cross-references, must have been an exhausting job. Among the citations are those that involve the *use* of the techniques, but no attempt was made to round up all users. Psychologists may be interested in knowing that the *Journal of Experimental Psychology* is said to be "the richest source of applications." Savage is a mathematical statistician.

A book in some ways similar to the volume Dr. McNemar mentions is Morris N. Young's *Bibliography of Memory* (Philadelphia: Chilton, 1961. Pp. ix + 436. $10.00). The publishers say it is the most complete bibliography of memory ever published. They may be right. At least our local hallway consultants find few, if any, holes in it. But they are learning psychologists, not memory psychologists. Dr. Young, the compiler, is an ophthalmologist and is now in the Medical Corps of the U. S. Army Reserve.

A third book for which mere listing seems not enough is B. F. Skinner's newly reprinted and enlarged *Cumulative Record* (New York: Appleton-Century-Crofts, 1959. Pp. x + 430. $6.50). To the earlier volume (*CP*, Feb. 1960, **5**, 35) Skinner has added three papers. There is a twelve-page piece on the "The Design of Cultures," first published in *Daedalus*. There are twenty-two heretofore unpublished pages on "Why We Need Teaching Machines," and a reprinting of the *American Psychologist* piece "Pigeons in a Pelican."

F. H. S.

What we suffer from is uniformity: the pressure exercised on all of us by countless material and ideologic instruments to think, feel and behave alike. The danger is not so much that we may be pressed to conform but that we automatically hasten to don the accredited costume.

—Turner Catledge

Postures, Sets and Readinesses

H. C. J. Duijker, P. Fraisse, R. Meili, P. Oleron, and **J. Paillard**

Les Attitudes. (Symposium de l'Association de Psychologie Scientifique de Langue Française, Bordeaux, 1959) Paris: Presses Universitaires de France, 1961. Pp. 189. NF 10.

Reviewed by Otto Klineberg

The several contributors to the present book are identified in the review, which was prepared by Otto Klineberg, who is already well known to any of CP's *readers who are interested in social psychology, international psychology, international relations, psychological aspects for race, UNESCO, the World Federation of Mental Health, Columbia University or in the singing of folk songs from many lands at APA Sociables. He is still officially and often physically in the Old Engineering Building at Columbia as Professor of Social Psychology.*

The International Union of Scientific Psychology is at present engaged in compiling a Glossary of psychological terms in three languages, English, French and German, as a means of facilitating cross-national communication in our discipline, and with the possible by-product of making the life of a reviewer somewhat less complicated. In this particular case there would seem to be no serious problem. 'Attitude' (French) can simply be translated 'attitude' (English), and one might hopefully expect that terminology could safely be subordinated to a concern with content and substance. As this symposium indicates, however, the attempt to define 'attitude,' at least in French, presents serious complications, and raises some important issues.

Of course we have problems of definition in English as well. A good many years ago, the concept of attitude was described as probably the most distinctive and indispensable concept in American social psychology (G. W. Allport, 1935). Several writers have defined the whole field of social psychology as concerned mainly with the question of attitudes. The general concern has not been accompanied, however, by general agreement as to the scope of the concept. This particular reviewer has had the impression for some time that the divergences in interpretation might be explained, at least in part, by the fact that 'attitude' entered into social psychology from two distinct directions. The sociologists, starting with the classical study of the Polish peasant (Thomas and Znaniecki, 1918), have tended to stress the relation to *values;* psychologists, taking their cue from experiments involving "set" in the laboratory, have emphasized *readiness to respond,* predisposition to react in specific ways to certain stimuli or situations. This contrast is admittedly based on an inadequate content analysis, but it seems not unreasonable.

The Symposium resulting in the present volume, took place in Bordeaux in September 1959, under the auspices of the society of French-speaking psychologists (Association de psychologie scientifique de langue française). The participants represent a wide range of interest and competence in the field of psychology, and their approach to attitude varies accordingly. For Paillard, physiological psychologist from Marseilles, attitude is essentially bodily posture, a functional state of readiness for movement or activity. Fraisse, experimental psychologist at the Sorbonne, discusses the role of attitudes in perception, critically reviewing a number of investigations into what Americans might call "functional" factors in perception, concluding that attitude is that phase which corresponds to a conditioned reaction of orientation, and which prepares the way for the activity of perceiving. Oléron, also of Paris, discusses attitudes in relation to intellectual activities, as involving a certain mental set, or a method of dealing with a problem. Meili, of the University of Berne in Switzerland, relates attitudes to affective or emotional reactions, and insists that an attitude is not merely a predisposition, but a fact which is directly observable; we can *see or feel* a hostile or suspicious attitude in others.

Meili believes that American research in this field is based almost exclusively on verbal attitude scales, and that there is a widespread opinion to the effect that there are fundamentally only two attitudes, favorable and unfavorable respectively; this he regards as an artifact due to the nature of the measuring instrument. Here he does American social psychology a little less than justice. His own view is that the term attitude is needed because it designates the constancy, the permanence of a form of reaction. Finally Duijker, social psychologist at Amsterdam, deals with attitudes and interpersonal relations, adopting a position close to that current in American social psychology, but emphasizing also the non-verbal, or better, the non-verbalizable aspects, and urging that reliance should not be placed exclusively on verbal techniques of study or measurement.

It is Duijker who puts his finger on the problem of communication with which this review began. He speaks with becoming modesty of his ignorance of the fact that in French the word 'attitude' is used to designate all the varied phenomena described by the other participants in the symposium; he adds that he will be discussing "Anglo-Saxon attitudes" rather than "French attitudes!" It is true that in English the word attitude has been almost wholly identified with social psychology; we tend to use "set" when referring to the field of motor activity, and a host of other terms in connection with perception and emotional behavior. In German, as Meili points out. 'Einstellung' corresponds to our 'set,' and 'Haltung' is the approximate equivalent of the English 'attitude.' In French the term is certainly used to cover a much more

extensive range of phenomena.

Fraisse makes a valiant effort to establish a convergence among the various views expressed in the symposium. He believes that all, or nearly all of them, can be subsumed under the general framework of a more or less permanent *disposition to react* (italics ours) to the situations with which we are confronted. Although Meili states that his own position is not adequately covered by this approach, the present reviewer feels that Fraisse's view is sound, and that it is capable of uniting the various possible approaches to the concept of attitude. What this symposium indicates, however, is that the concept is broader in scope, and has much wider implications, than we in the United States have usually recognized.

In the general discussion which followed the presentation of the main papers, participants included psychologists from a number of French universities, as well as a few from other countries, including Germany, Rumania, Poland, Italy, Switzerland, England, and Belgium. The exchanges are interesting and constructive, and show a wide knowledge of the psychological literature, including many references to American publications. We should return the compliment, and read more of what our French-speaking colleagues have to contribute to our common discipline.

Cops, Robbers and Psychology

Hans Toch (Ed.)

Legal and Criminal Psychology. New York: Holt, Rinehart and Winston Inc., 1961. Pp. xviii + 426. $6.00.

Reviewed by JOSHUA A. FISHMAN

Hans Toch, who contributed to and edited this volume, is identified by the reviewer, Joshua A. Fishman, who is Dean and Professor of Psychology at The Graduate School of Education of Yeshiva University. Dr. Fishman's most persisting interest has centered on verbal behavior, with particular concern for such aspects of it as bilingualism and the Whorfian hypothesis. Periodic departures from his core interests have led him into a number of projects including, besides deaning, his work as co-editor of the issue of the Journal of Social Issues, *appearing during the period of McCarthyism, dealing with the problem of the performance of witnesses under stress.*

THERE ARE few new books within the broad domain of American psychology that carry references to publications stretching from 1832 to 1960. This is such a book. There are few books which give the reader a glimpse into the prehistory of a field later psychologized, a review of psychology's subsequent very intensive development of that field, and, finally, a glance at psychology's well nigh complete retreat from the core of that field. This is such a book. There are altogether too few books that unassumingly and successfully provide provocative reevaluations of traditional customs and procedures in applied fields in the light of current scientific theories and facts. This is such a book.

Hans Toch, who has edited this volume, is on the faculty of Michigan State University, where he teaches (among other things) a course in Legal and Criminal Psychology. He has worked in several areas of social psychology as well as on problems of visual perception. In this volume he is joined by fifteen other contributors, some of whom are practitioners in the fields of law and correction, some of whom combine practitioner and social science training, and some of whom are more "purely" social scientists of the standard academic variety. They have come together in this volume "to provide the student, the interested layman, and the specialist with facts . . . , to challenge thinking and provoke argument about these facts . . . , [and] to help in defining problems and suggesting possible solutions . . . in the administration of criminal justice and the treatment of social offenders."

IT IS a commentary on the distance—in time and in topics—now separating this field from most of American academic psychology that the very title *Legal and Criminal Psychology* is calculated to bring forth a smile and a quip. However, these are not laughing matters for Dr. Toch and his colleagues (among whom Albert Ellis, Thomas Szasz, and William W. Wattenberg are most likely to be well known to *CP's* readers). Under "legal psychology" they consider such topics as trial tactics in criminal and in civil cases, and the psychology of juries and judges. Under "criminal psychology" they consider such matters as the development and gauging of criminal predispositions, juvenile delinquency, psychopathic (sociopathic) personalities, current practices and new developments in correction, and particular groups of offenders such as drug addicts, alcoholics, and sexual offenders. It has been several years since a similarly broad gauged volume has appeared in this field. The current volume is definitely an improvement over those that have come before that are likely still to be in print.

The editor states that this volume "encroaches on the law school, on courses in criminology, on seminars in clinical psychology, and on a variety of other domains." Fortunately or unfortunately, criminology and clinical psychology are so rapidly becoming highly specialized, technical and rigorous professional fields that it is doubtful that introductory reviews on allied topics can long continue to be of value in connection with them. On the other hand, the curricula and training programs of the law enforcing and interpreting professions are so crowded that it is unlikely that much formal psychology and sociology can be introduced into them or that such introduction would do any good were it feasible. Thus, texts such as this would seem to have their greatest justification in the training of lawyers, police officers and others who cannot afford the luxury of long and rigorous exposure to and translation from academic psychology and sociology. Social scientists will always have a responsibility to communicate provocatively, accurately, and understandably with such practitioners; we therefore owe a vote of thanks to Dr. Toch and his colleagues for having done just that.

McGRAW-HILL *Books in Psychology* NEW and UPCOMING √

☐ TEACHING MACHINES AND PROGRAMMED LEARNING: An Introduction to Autoinstruction

By EDWARD FRY,
Loyola University.
Available in October.

Describes, pictures, classifies and explains all major types of teaching machines. Includes detailed descriptions on how to write, evaluate and utilize programs. There are samples of various types of programming with comments on programming from many major leaders in the field plus the author's own summary and synthesis of programming ideas.

☐ AGGRESSION: A Social Psychological Analysis

By LEONARD BERKOWITZ,
University of Wisconsin.
McGraw-Hill Series in Psychology.
Just published.

Emphasizing the actions of human beings in social settings, this book reviews theoretical and research material dealing with aggressive behavior. Material included ranges from ethological and biological observations, animal experimentation, personality theory and research, and relevant sociological formulations. Investigations are summarized and brought together under a common theoretical framework.

☐ READINGS IN INDUSTRIAL AND BUSINESS PSYCHOLOGY, *Second Edition*

By HARRY W. KARN and B. von HALLER GILMER, both of Carnegie Institute of Technology.
McGraw-Hill Series in Psychology.
515 pages, $6.95 (cloth), $4.95 (paper).

This collection of original papers represents current thought and research in the area of industrial and business psychology. Over 800 articles were examined before a final decision was made. The new edition contains more articles of an experimental and theoretical nature and for the first time includes selected readings in the areas of organizational behavior, engineering psychology, communications and the psychology of perception.

☐ INDIVIDUAL IN SOCIETY: A Textbook of Social Psychology

By DAVID KRECH, RICHARD S. CRUTCHFIELD and EGERTON L. BALLACHEY, all of the University of California, Berkeley.
516 pages, $7.95.

The purpose of this book is to organize fact and theories from general psychology, personality psychology, social psychology, anthropology and sociology, showing the interrelationships which exist among these areas. The four main study areas are: basic psychological factors; attitudes; social and cultural habitat of man; group and organizational behavior. A complete revision of Krech and Crutchfield's *THEORY AND PROBLEMS OF SOCIAL PSYCHOLOGY.*

☐ INCOME AND WELFARE IN THE UNITED STATES

By JAMES N. MORGAN, HARVEY E. BRAZER, WILBUR J. COHEN, all of the University of Michigan; and MARTIN H. DAVID,
University of Wisconsin.
Just published.

A national personal interview survey is employed to study the distribution and redistribution of income, what determines peoples' incomes, and the intergenerational transmission pattern. The analysis of this survey combines demographic, economic, and social-psychological measurements on each family studied to give a detailed explanation of what determines the economic position of that family.

☐ MOTIVATION: As Related to Personality

By DOROTHY RETHLINGSHAFER,
University of Florida.
McGraw-Hill Series in Psychology.
Available in Winter, 1963.

Emphasizing changes in human activity, this advanced book uses the experimental approach. It considers a biological approach to motivation, but stresses studies using human subjects. The book is organized around such concepts as arousal, personal pace, drive, and drives. In addition, consideration is given to choice as motivationally determined. Illustrations are drawn from both industry and clinical observations.

Send for copies on approval

McGraw-Hill Book Company, Inc. MH 330 W. 42nd St., New York 36, N.Y.

Do-it-Yourself Group Dynamics

Josephine Klein

Working with Groups: The Social Psychology of Discussion and Decision. London: Hutchinson and Co., 1961. Pp. 240. 35s.

Reviewed by BEN WILLERMAN

Josephine Klein is a Hollander who moved to England early in World War II, and obtained a doctorate at the University of Birmingham. She is now a lecturer in social psychology on the faculty of Commerce and Social Science at that university. She authored The Study of Groups, *published by Routledge and Kagan Paul in 1956. Ben Willerman, the reviewer, is Professor of Psychology at the University of Minnesota and is an old hand at group dynamics, American style. He studied with Kurt Lewin at the University of Iowa in the early forties and, after the war, joined the Lewin group at M.I.T. and received there his PhD. After a spell at Michigan's Survey Research Center he moved to Minnesota where, from the office of Dean of Students he has concerned himself with both the individual and group life of undergraduates. He is now also on the staff of the Laboratory for Research in Social Relations.*

OVER the last fifteen years there has been a remarkable growth in the number of workshops, laboratories and institutes expressly organized to develop group interaction skills. Sometimes the training emphasizes both theoretical aspects of group dynamics and guided experience in group interaction and sometimes only the latter. Whatever the emphasis, the training is usually conducted by experts who are experienced in establishing conditions where a person becomes aware of the impact his behavior has on the group and where he can try out new forms of behavior which may make him a more effective leader or group participant.

Josephine Klein has written a book for the many who wish to improve their skills in working with groups but do not have the time or money to attend a training center such as the National Training Laboratory for Group Development at Bethel, Maine. She assumes that "working with groups requires three skills: an understanding of theory, a knowledge of its application, and trained experience in its use." Her book is intended to provide the first and second of these skills. The last requirement can be met if the reader gets together with other interested persons and uses the role-playing and group self-evaluation techniques described in the final chapters.

Klein's theoretical orientation—perhaps 'framework' would be a better term—is familiar to students of group dynamics. In order to make a decision the members of a group have to agree upon some course of action. A good decision is preceded by a full exchange of relevant *information* upon which ". . . *views* are expressed and *proposals* made, until finally one proposal manages to secure *agreement* . . ." This sequence does not always proceed smoothly, however, because members engage in *self-expressive* behavior as a consequence of the values, motives, and goals they bring into the group. Self-expressive behavior may be either appropriate or inappropriate, depending on whether it is ". . . relevant to the values and goals which individuals wish to pursue as members of the group."

Klein acknowledges her indebtedness to Bales for much of this formulation and indeed uses his interaction categories to describe and analyze a variety of examples of group interaction. These examples are an important part of the book and are designed to aid the reader in identifying the various categories of interaction in groups. Interaction matrices help the reader to grasp what went on in the group and are used to show how various member roles and functions—both constructive and disruptive—may be identified.

IN THE early chapters, which elaborate various aspects of the theory, Klein does an excellent job of explaining clearly and illustrating vividly those current concepts in social psychology which bear upon the means by which groups reach agreement and make decisions. Her discussion of group cohesiveness, social reality and comparison processes, for example, includes a convincing demonstration of how these processes may result in decisions that are both unanimous and incorrect.

After discussing the theory, Klein applies it to the complex situations of everyday life. One of the most important contributions she makes in this section is to modify the generalization of results from laboratory experiments to extra-laboratory groups by taking into account important differences between the two settings. She wisely points out, for example, that committees are not self-contained groups but function in and are importantly affected by a larger social context. She shows how a person's membership and position in other formal and informal groups affects his behavior and standing in the current group. Describing the Bennett experiment on group decision, in a chapter on group change, Klein cautions the reader that though this study found no effect of discussion prior to decision, discussion may very well be necessary when behavior rooted in emotions is at issue.

The book concludes with three chapters on the uses of role-playing—as an aid in clarifying issues, as a training device, and as material for group self-evaluation. These chapters have been written so that even an inexperienced group without an expert to guide it should be able to establish and conduct profitable role-playing sessions. Klein anticipates effectively the problems beginners are likely to encounter. She has organized the chapters to facilitate the transition from one stage of learning

to another and she makes a number of concrete suggestions for dealing with critical details of the procedure and for using observation schedules to evaluate group interaction. The chapters also contain records of a group going through the stages of role-playing.

The author has done well what she set out to do. The present reviewer has only one serious criticism of this book; it concerns the lack of consideration given to the conditions under which group skills acquired during training are likely to generalize to life situations. For example, some trainers believe that unless the significant persons in a trainee's organization support the subject's changed approach to interpersonal relations he backslides rapidly. Despite the popularity of role-playing it is surprising and disappointing that there is available so little objective evidence for its effectiveness. Of course, the author cannot be held responsible for this state of affairs.

I recommend this book not only for the do-it-themselvers but also as a text for practical courses in group dynamics and as supplementary reading for the more academic courses. The book is written in English english but except for an occasional foreign expression like "flanneling" Americans should have no problems with the language.

The Here and Now in Psychotherapy

Roy R. Grinker, Sr., Helen MacGregor, Kate Selan, Annette Klein and **Janet Kohrman**

Psychiatric Social Work: A Transactional Case Book. New York: Basic Books, 1961. Pp. xiv + 338. $6.50.

Reviewed by FREDERICK H. KANFER

Roy Grinker since 1946 has been the Director of the Institute for Psychosomatic and Psychiatric Research and Training of the Michael Reese Hospital. Helen MacGregor is Director of Psychiatric Social work at the same hospital and Kate Selan and Annette Klein are staff members there. Frederick H. Kanfer, the reviewer, wrote this review while an associate professor of psychology at Purdue University but he will read it in print after he has become Professor of Psychology at the University of Oregon Medical School. He is a hyphenated psychologist, with the hyphen in his case coming between clinical and experimental. He is an ABEPP Diplomate in clinical and his research deals with verbal behavior, including that occurring during psychotherapy.

THIS is a book about psychotherapy. It provides a clear statement of the assumptions underlying the "interactional" method described here and excellently illustrates its approach. The authors explored, analyzed, and experimented with the patient-therapist relationship and came up with a focus on the "here and now," represented by the roles of each participant in the interaction.

The book is written as a report on a series of "researches" evolving from a seminar which was started in 1950 under John Spiegel at the Michael Reese Hospital and Medical Center in Chicago. The seminar began with the purpose of studying the functions of the psychiatric social worker. In 1952 Grinker took over direction of the seminar for the remaining six years. In the Preface Grinker tells us that the goals of the seminar changed during these years. The final product clearly shows the dual orientation. To this reviewer the strength of this book lies in its contributions to psychotherapy and its analysis of social service functions; its weakness lies in the attempt to combine these separate goals.

Transactional theory emphasizes the patient-therapist interaction as one in which "reverberating communications indicate understandings and distortions of messages capable of being corrected and leading to learning, growth, and change" (p. 294). The authors stress the analysis of explicit and implicit roles in the therapeutic system. Their orientation is based on a field approach, focussing on understanding the patient's roles and the means by which complementary roles can be modified within therapy. The essence of interactional psychotherapy is a gradual exploration of a patient's implicit role, resulting in increased insight, improved social behavior, and more stable affect in the patient. Gentle clarification of the patient's implicit role and avoidance of total complementarity by the worker ideally encourages the patient to explore more adequate behaviors which are finally learned and consolidated.

Students of personality theory have often been overwhelmed by the ubiquity of psychoanalysis. Analytic constructs provide coverage, though sometimes sparse, ranging from cultural phenomena to minutiae of subjective experiences. The psychoanalytic enterprise has probably been most fruitful when viewed as a theory of personality development, and weakest when used as a base for specific therapeutic operations. This book attempts to differentiate between these two applications of the psychoanalytic model. "It restricts the use of psychodynamic theory to the understanding of underlying motivations, conflicts, and defenses without the confusing use of modified psychoanalytic techniques" (p. xi). The divorce of analytic personality theory from its companion model for therapy may be executed most easily when goals are limited and specific. The case materials suggest that longer contact with the patient and increasing information about his developmental history may make it more difficult to resist the temptation of dealing with the patient and his internal dynamics, rather than with his performance in a dyadic communication system. The more subtle and complex the implicit roles of the patient become, the more tempting it may be for the worker to fall back on a traditional explanatory system in

talking about the patient. In general, this reviewer noted a remarkably close correspondence in this book between the proposed theoretical framework and its use in case illustrations. Nevertheless, the occasional overlapping of transactional and psychoanalytic language, especially in discussion of a long-term case, suggests that a therapist's bias *vis à vis* a personality theory may predetermine the contents of therapeutic explorations and affect the relationship, even though the therapist's explicit therapeutic operations do not stem from the same theory.

THE BOOK has another facet. Throughout there is a concern with the role of the social worker in the psychiatric setting. This reviewer was somewhat puzzled by the contradictions which develop when the authors convey the impression on the one hand that the role of the social worker is quite nicely structured, and on the other hand that attempts to discriminate between the functions of psychiatrists and psychiatric social workers have not been very fruitful. "When we come to grips with a problem of role differentiation from a practical standpoint, the answer is simple. Clinical psychologists and psychiatric case workers are doing psychotherapy. Without the former, the public mental hospitals could furnish virtually no psychotherapy; without social workers doing psychotherapy, community clinics would be seriously handicapped" (p. 115). After discussing the necessary prerequisites for doing psychotherapy and the overlap between the activities of members of various professions the writers clearly indicate their own stand. "Even though we consider psychotherapy a medical (psychiatric) treatment, and the medical practice acts of many states would seem to so imply, psychological intervention is a form of drugless therapy and not subject to restrictions of licensures. For our purposes we consider that psychotherapies are conducted in clinics *under psychiatric administration* (italics are the authors') so that we can transcend the problems of training, supervision, and responsibility. Let us be clear that we are discussing psychotherapy no matter who the therapist may be" (p. 115). This reviewer infers this statement to mean that it may not matter who does psychotherapy, nor apparently what professional training he has had, as long as the administrative hierarchy is clearly defined. While this view may be disturbing to many, it does permit the authors to approach the case worker as a person who is responsible to and therefore evaluated by a psychiatric team member. Beyond this, the authors' approach to psychotherapy does not seem to be handicapped by this view.

The book is uneven in pace as it shifts from theory to case illustrations. Over two-fifths of the book is devoted to the discussion of one case; 22 other case excerpts are brief and specific in the points which they illustrate. Students of psychotherapy and their teachers may find this a very useful didactic volume. It is a pity that the title is misleading and that many people who are not interested in social work but who are interested in psychotherapy will miss it. The book will surely be appreciated by anyone with a serious concern for the understanding of the psychotherapeutic process. It will be read with profit by those who search for a model fitting the intense and complex human relationship so skillfully and tenderly nurtured in psychotherapy and so little understood in terms of the means by which it is nurtured.

Psychological Light from Catholicism

A. Godin, S. J. (Ed.)

Adult et infant Devant Dieu: Études de Psychologie Religieuse: Cahiers de Psychologie Religieuse. (French edition)

Child and Adult before God: Thought and Research: Lumen Vitae Studies in Religious Psychology. (English edition) Brussels: Lumen Vitae Press, 1961. Pp. 182 (Fr.), 161 (Eng.). 75 fr.b. —12 s. —$1.50.

Reviewed by WALTER HOUSTON CLARK

Dr. André Godin, S. J., the editor of and contributor to the present volume, is known to many American psychologists as a perceptive and articulate student of the psychology of religion. He took a master's degree in psychology at Fordham, and is a member of APA. But he lives and works abroad. Presently he is in Brussels and on the staff of Lumen Vitae, the Roman Catholic international center for the Study of Religious Education and the Psychology of Religion. Walter Houston Clark, the reviewer, did his Harvard dissertation on a study of the Oxford Group and since has become a very widely recognized authority in the field of the psychology of religion. Until recently he was Dean and Professor of Psychology at the Hartford School of Religious Education. Now he is Professor of the Psychology of Religion at the Andover Newton Theological School. His 1958 book The Psychology of Religion *is widely used as a text in Protestant, Catholic and other institutions.*

THE *Lumen Vitae Studies in Religious Psychology* comes perhaps as close to anything we have as an international medium for studies in this field. Published regularly in French and English editions it speaks not only to the Roman Catholic community but addresses a wider public as well. In this number the articles in the two editions do not completely coincide. Articles by the Editor, M. O. Nelson and Morris Jones, and Salvatore Di Michael of the U.S.A., and Aron W. Siegman of Israel do not appear in the English edition;

while one by Henri Bissonier of France does not appear in the French. Presumably this may reflect copyright limitations or the fact that the information is already otherwise available, for some of these articles are among the most sensitive and cogent of the studies.

As might be expected, the articles differ in quality. For example, the article by Margaret P. Robinson of Homerton College, England, on "The 'Lumen Vitae' Religious Projective Pictures, Presented as a Group Test on Lantern Slides" struck the reviewer as not too clear or impressive, while "Magic, Witchcraft and Literacy: Comments on Some Beliefs and Attitudes among West Africans" by Gustav Jahoda of the University of Glasgow would stand up with any social scientific article of similar scope.

The studies as a whole tend to underline the difference between American and European traditions in psychology, for not all that the American psychologists will sense as different in the volume stems from what most will recognize as the Roman Catholic idiom. The difference we have in mind is a noticeably lower standard of statistical precision in European studies, but a richer base of scholarly background, which tends to make greater use of what Gordon Allport calls "the most sensitive measuring instrument ever devised," namely the human mind. Studies such as we have here often gain in significance what they may yield in precision. An example is the article "Recent Research into the Psychology of God-consciousness in Meditation" by Alfons Bolley of the University of Bonn. Despite some unclearly supported statements, the article nevertheless touches the essential processes of the religious self at a depth far beyond that of the usual writer in the field of the Psychology of Religion. Somewhat the same might be said of the article "Perceptionlike Images in the Religious Experience of the Child" by Göte Klingberg of Falun Teachers College in Sweden, though his generalizations are more careful. His conclusion that the greater incidence of eidetic and visionary imagery, often of a religious nature, which he shows to be true of the child, may contribute to give the teacher "a deeper appreciation and perhaps respect for what takes place in the concealed life of his pupils," appeals to us as not only sound but appropriate as well. In view of what the hallucigenic drugs are revealing to us of the hidden potentialities of the human mind, this clue to the nature of religious experience may well be checked and pursued by others.

The article by Siegman in the French edition "La Notion de Dieu et l'Image du Père," is a comparative study of children in Israel and the U.S.A., which combines significance with rigorous methodology. Presumably the excellent article by a former President of the American Catholic Association, Salvatore Di Micahel, "Les Retentissements affectifs de l'Handicap physique sur les Attitudes religieuses," is available somewhere in English.

But perhaps the most valuable feature of the issue is the generously and perceptively annotated 38 titled bibliography of important works in the field of the Psychology of Religion supplied by the Editor, thereby bringing up to date a similar bibliography published by *Lumen Vitae* in 1957. Most of these titles are English or French with a sprinkling in Spanish, Italian, and German. We know of no one who is better read in the international literature of the Psychology of Religion than Father Godin.

The question may well be raised as to the value of these pages for the non-Catholic psychologist or religious educator. Enough has already been said to suggest the intrinsic value of these studies. But it is true that some articles are directed toward the solution of peculiarly Catholic problems, such as the sensitive discussion of "Catechetical Pedagogy of Mentally Deficient Children" by Abbé Bissonier of the Graduate Catechetical Institute of Paris. Yet even in this somewhat parochial area *Lumen Vitae* yields an unexpected bonus. It is a paradox that though no American psychologist would blush to identify himself with, say the Kickapoo Indians, for purposes of study (and would very likely come up with a very sympathetic and perceptive account) a bashful hesitancy would probably overcome him when it came to showing too warm appreciation of the Roman Catholic church, or other religious groups. This might even include some Catholic psychologists. And yet these religious people are those with whom he rubs elbows in his daily life. Their cultural contribution deserves to be understood just as sympathetically as that of the Kickapoos; and beside, the over-all cultural reward for Catholics and non-Catholics alike will be much greater. This and other issues of *Lumen Vitae* will instruct him as a psychologist and will also help him to understand Catholic culture at its best. The volume is warmly recommended.

Things Take Shape

N. S. Sutherland

Shape Discrimination by Animals. Experimental Psychology Society Monograph No. 1. Cambridge, England: W. Heffer and Sons, 1961. Pp. iv + 68. 1/1/0 or $2.94.

Reviewed by Carl E. Sherrick Jr.

The author, N. S. Sutherland, is Lecturer in Experimental Psychology at Oxford University. He graduated from Oxford in Greek and Latin literature, ancient history and philosophy and then turned to experimental psychology. For the last four years he has been directing a research project, jointly supported by the Office of Naval Research and the Nuffield Foundation on stimulus analyzing mechanisms. The reviewer, Carl Sherrick, will, in September, be associated with the Department of Psychology at Princeton University. CP *earlier reported on his taste for touch* (CP, *Jan. 1962,* **7**, *19*). *Although his primary focus is on cutaneous matters, he does at least occasionally raise his eyes to, and involves his cortex with, other modalities.*

In an age when more time is required to do finished research and less journal space is available to report it, the appearance of a new monograph series is a welcome event. The Experimental Psychology Society Monograph Series is

intended to provide an outlet for worthy contributions that are too long for journals and too technical to be published as books.

Sutherland's work, the first of this new series, purports to review two topics: the methods, materials, and measures for the analysis of shape discrimination by animals, and the results of such analyses. The author describes experimental work that attempts (a) to determine the discriminability of shapes, and (b) to discover the properties or dimensions in terms of which shapes are discriminated. By eliminating from his discussion such issues as the continuity non-continuity dispute, effects of early experience, or the establishment of learning sets, the author hopes to prevent a number of large tails from wagging his chosen dog, i.e., discrimination *per se*. Such a thorough isolation of the subject from its empirical context will surely elicit uneasy mutterings from some readers, especially when they read, " . . . the question (how animals come to classify shapes) is logically independent of how that mechanism came into existence, i.e., whether it is the result of genetical or empirical factors" (p. 3). On p. 13, however, Sutherland notes that limits to discriminatory capabilities may be determined by the method of earlier training. Sutherland's statement should therefore be amended to read that the assumption of logical independence of acquisition and performance is valid only to the degree that the obtained measures of performance are independent of the acquisition process.

The review of methods, materials and measures for studying shape discrimination should be rewarding to the graduate student and the friendly stranger to this area of animal behavior. In this problem area, the review appears to be systematic and nearly exhaustive. The series of experimental studies by Sutherland of shape discrimination in the octopus, for which he is best known until now, has prepared him for this careful examination of the several problems in this difficult field. A critical review of the results of nearly all pure discrimination studies comprises most of the rest of the monograph, except for a brief but interesting description of the author's hypothesis of stimulus analysis by scanning. The hypothesis permits, for example, explanation of the paradox of ease of discrimination of some mirror images and not others.

As a source of experimental designs, working hypotheses, and low-order theory in this problem area, the monograph should be unsurpassed for some time to come.

Measuring Values in Five Cultures

Florence Rockwood Kluckhohn and **Fred L. Strodtbeck,** with the assistance of **John M. Roberts, A. Kimball Romney, Clyde Kluckhohn** and **Harry A. Scarr**

Variations in Value Orientations. Evanston, Ill.: Row, Peterson, 1961. Pp. xiv + 437. $7.75.

Reviewed by RALPH K. WHITE

Florence R. Kluckhohn, widow of anthropologist Clyde Kluckhohn, is associated with Harvard's Department of Social Relations where she has worked on the long-term "values project" in that department. Fred Strodtbeck, co-author, is Associate Professor of Sociology at the University of Chicago. Though he has professed sociology at Chicago and elsewhere, he is an APA member and has done his research on such problems as small groups, including juries, husband and wife interaction, and three person families. The reviewer, Ralph K. White, is the White of the famed Lewin, Lippitt and White team of researchers. He is also the White of the White and Lippitt who wrote Autocracy and Democracy *in 1960* (CP, *October 1961*, **6**, *366*). *Without collaboration he wrote the booklet, sponsored by SPSSI,* Value Analysis. *He is now Chief, Special Projects Division, Research and Reference Service of the U. S. Information Agency and his chief concerns are the Soviet perception of the United States and barriers to communication between the two countries.*

THIS BOOK represents a real breakthrough in the application of rigorous quantitative methods to the study of those psychological intangibles that most of us regard as crucial but that are often assumed to be open only to a purely qualitative approach. Its subject-matter consists chiefly of four very broad "value orientations" implicit in the daily lives of five communities in New Mexico, representing five rather heterogeneous cultures: Zuni, Navaho, Mexican (Spanish-American), Mormon and Texan.

The primary and most distinctive technique used is a highly standardized interview that seems beautifully adapted to administration in widely different cultures and to the making of cross-cultural comparisons. It consists of 22 questions, one of which may serve to illustrate the character of the instrument. The respondent is asked to choose between two bosses: "One was a fair enough man, and he gave somewhat higher pay than most men, but he was the kind of boss who insisted that men work hard, stick on the job. . . . The other paid just average wages but he was not so firm. He understood that a worker would sometimes just not turn up—would be off on a trip or having a little fun for a day or two . . ." A preference for the first boss is counted as illustrating the "Doing" value orientation (working, achieving), while a preference for the second is counted as illustrating the "Being" orientation (immediate enjoyment or "spontaneous expression in activity of impulses and desires").

Using this instrument it is found, for example—and demonstrated with ad-

mirable statistical rigor—that, in the value-orientations measured, the two Anglo-American communities (Mormon and Texan) are fairly close to each other. And, more surprisingly, it is found that the culture differing most radically from the Anglo-American is not the Zuni or the Navaho but the Spanish-American. Where the Anglo-Americans are concerned with "Doing" the Spanish-Americans are concerned with "Being." Where the Anglo-Americans are planful and future-oriented the Spanish-Americans tend to live in the present moment. Where the Anglo-Americans think man should seek mastery over nature the Spanish-Americans think he is subjugated to nature, and should fatalistically accept his role. And where the Anglo-Americans are highly individualistic (by the measures used) the Spanish-Americans tend to have an even balance between individualism, "lineality" (accepting the decisions of parents and elders), and "collaterality" (decisions by groups on more or less the same level). Obviously there is plenty of room here for the kind of mutual exasperation that can arise when basic value differences exist and are not recognized or accepted.

Another contribution of the book is its refreshing emphasis on exploring "variant" as distinguished from "dominant" value orientations within a culture. It is here, however, that both the theory and the method seem most incomplete. The chief criterion of "variation" is not any of the familiar measures of the dispersion of individuals, such as a standard deviation, nor is it any measure of how a given individual varies from time to time or in different circumstances. Although there is enormous statistical elaboration of other aspects of the data, these simple aspects are not explored. The chief criterion of "variation," greatly elaborated, is the degree to which the response-pattern of a community as a whole resembles the pattern that would have been produced by chance (the null hypothesis). For instance, the Mormons and Texans are described as having relatively little variation in their "relational" orientation (individualism-lineality-collaterality) since they depart from chance very significantly in their preference for individualistic answers, while the Spanish-Americans are described as having much less "patterning" and more "variation" of response because they showed a much more nearly equal balance of the three possibilities: individualism, lineality and collaterality. But does not this ignore the possibility that what resembles chance distribution may not actually be produced by chance? In the Spanish-American culture, for instance, could there have been a strong—and rather uniform—preference for *keeping the three values in balance?* Suppose each Spanish-American had been exactly like every other Spanish-American in valuing each of these things exactly equally. The forced-choice technique of the interview (which contained no open-end questions and reflected no variations in intensity) would still have forced each individual away from this mid-point of equal balance; there would have been a spurious appearance of randomness, and this randomness would have been mistakenly described by the investigators as "variation."

Less serious, perhaps, is another kind of incompleteness: the focus on only a few value orientations without real discussion of why these rather than others are regarded as crucial. Such values as friendship, cooperation vs. hostility, sexual purity, knowledge, beauty and humor are rarely brought into the theoretical picture. It is as if a blind man described in detail two of an elephant's legs, an ear and a tusk, without discussing whether the elephant might also have a trunk and a body.

Anthropological Psychology

Francis L. K. Hsu (Ed.)

Psychological Anthropology: Approaches to Culture and Personality. Homewood, Ill.: Dorsey Press, 1961. Pp. v + 520. $7.95 (college) $10.60 (trade).

Reviewed by Irvin L. Child

Dr. Francis L. K. Hsu, who edited and contributed to the present volume, is professor of anthropology at Northwestern University. A native of China and a graduate of the University of Shanghai, he took his doctorate in anthropology at the University of London and has taught in this country for the last seventeen years. Irvin Child, the reviewer, received his doctorate at Yale in the late thirties, was farmed out to Harvard for a while and learned so much so quickly there that he was very soon called back to New Haven and has been there ever since. His interest in culture and personality perhaps took lasting root during his year, in 1941-42, as Latin American Research Fellow and flowered most conspicuously in the 1953 book, with John Whiting, Child Training and Personality; A Cross Cultural Study.

The term "Culture and Personality" has for several decades now been used to label a field of special study within anthropology. The editor of this volume argues that a happier choice of label is *psychological anthropology*, and under that title he has assembled a collection of papers especially written as a survey of this field. As might be expected from this aim, and from the fact that 10 of the 14 authors are anthropologists, the book is oriented more toward anthropology than toward psychology. I propose to review it here, however, with reference to its relevance to psychology; and 'psychological anthropology' is, like the persons representing it here, genuinely enough interdisciplinary so that it is possible to do so with only a little one-sidedness and without violent neglect of the aims of the writers.

Are there psychologists who dream,

and as yet only dream, of some day traveling to a distant part of the world for field work on culture and personality? For the gradual shaping of such dreams into plans, the *area* section of this book (nearly a half of its total length) should be an invaluable help. Each of the six chapters in this section reviews the study of culture and personality in some segment of human societies. In the course of doing so, some authors quite explicitly (and the rest at least implicitly) indicate what theoretical problems may most clearly be studied to special advantage within the region reviewed. These same chapters will of course be useful to all social psychologists as a review of major field research and associated theory.

The rest of the book, organized into several briefer sections, will be of more general interest to a greater variety of psychologists. Three of the chapters deal with general problems of theory and method. Donald Campbell discusses the mutual methodological relevance of anthropology and psychology; he manages in brief space both to state some old and important observations with striking clarity and apt examples, and to state novel observations of equal importance. Francis Hsu (in an introductory chapter) discusses the place of psychological anthropology in the behavioral sciences including, of course, social psychology. Melford Spiro, in the article which concludes the book, discusses the place of psychological anthropology within anthropology as a whole. In thus dealing with what one not familiar with his writings might deem a parochial concern, he shows that the quest for theoretical understanding requires the destruction of parochial boundaries of academic disciplines. Thorough analysis of social and cultural systems, he argues, requires a theory of personality dynamics. Should there be any psychologist readers who at this point enjoy smugly picturing to themselves a boundary permeable only in one direction, they will do well to turn back for re-reading of Campbell's chapter.

THE REMAINING chapters might all be classified as topical. Two of them are centered on the concept of socialization, and primarily on hypothesis-testing research with cross-cultural data. In one of these, Whiting reviews the various studies that have been done on the interrelations among maintenance systems, socialization practices, and projective systems, with a predominant explanatory appeal to personality constructs. In the other, Aberle concentrates on factors influencing socialization, and draws upon ethnographic knowledge to suggest new hypotheses, as well as reviewing hypothesis-testing research. Both these chapters include a brief presentation of some research not yet published elsewhere. A stress on kin relations in adult life, rather than socialization, characterizes an article by Hsu; he argues that special cultural emphasis on one or another kin relationship underlies the broad differences among large culture areas. (The relationship between husband and wife is the central one, according to his thesis, in the shared culture of Europe and its former colonies.)

An article on anthropological studies of dreams, by Roy D'Andrade, resembles the two articles on socialization in including a presentation of original cross-cultural research—here, on the conditions giving rise to use of dreams for control of supernatural forces. Another topical chapter by Anthony Wallace argues that study of mental illness is an opportune place to fuse organic and psychosocial causes in a unified explanation of behavior. Finally, an article by Bert Kaplan on the cross-cultural use of projective techniques does not attempt a detailed review, but concentrates on presenting an admirable general and critical statement of aims and accomplishments.

The subject matter of this volume is obviously psychological as well as anthropological, and no chapter fails to refer to research by members of both disciplines. Why, then, do we have a *psychological anthropology* and not an *anthropological psychology?* Is the answer to be found in a generalization about direction of scientific influence which explains also why the label *physiological psychology* is more widely used than that of *psychophysiology?* Perhaps, but then why do we have biochemistry and biophysics rather than chemical and physical biology? At any rate, this particular interdisciplinary area has thus far attracted more attention from anthropologists than from psychologists. There have been, in my opinion, too few interdisciplinary teams, and the single workers have more often been anthropologists than psychologists. This excellent volume and the somewhat similar recent book, *Studying Personality Cross-Culturally*, edited by Bert Kaplan, a psychologist, (*CP*, June, 1962, **7**, 210) may do much to increase the number of psychologists who directly contribute their skills and concepts to this interaction. Anthropology, I believe, has profited greatly from the impact of psychology. Psychology, I am sure, will profit greatly from an increasing impact upon it by anthropology.

A Pioneer on Bodily Processes

Henri Piéron

La Vision en Lumière Intermittente: Lois et Mechanismes de la Frequence Critique de Fusion. (Monographs Françaises de Psychologie. No. 8) Paris: Centre Nationale de la Recherche Scientifique, 1961. Pp. 91. 8 NF.50.

Reviewed by S. HOWARD BARTLEY

The author, Henri Piéron, now 81 years old, must be regarded as one of the pioneers of scientific psychology. His 1927 book Thought and the Brain *and his* The Sensations: Their Functions, Processes and Mechanisms *are widely known in this country. He is now Professeur Honoraire de Physiologie des Sensations au College de France. The reviewer, S. Howard Bartley, Professor of Psychology at Michigan State University, has done some pioneering himself. For 34 years he has investigated, at the University of Kansas, at Washington University Medical School, at the Dartmouth Eye Institute and now at Michigan State, the relation between body process and sensation or perception. He was one of the first investigators in this country to study brain*

waves. He has authored four books, Vision: A Study of its Basis *(1941),* Fatigue and Impairment in Man *(1947),* Beginning Experimental Psychology *(1951) and* The Principles of Perception *(1958)* (CP, *Dec. 1958,* **3,** *353).*

PIÉRON reviews some of the work on intermittent photic stimulation and attempts a general "synthesis" of the facts regarding stimulus, body process and sensory end-result. This is a timely and worthwhile objective, since all too little is written with this synthesis in mind, and since the understanding of this three-part interrelation ought to be one of the main aims in psychology. In many ways, Piéron ought to be eminently qualified to do this, for he has followed experimental developments in physiological psychology for many years, and has done fundamental work in this area himself.

He reviews briefly the work of Ives, Cobb, Ross, Winchell and Simonson, Battersby and Jaffi, McFarland et al, Landis and colleagues, and Bartley et al, as well as his own as they all pertain to the findings from "flicker experiments." Very brief mention is given to workers in the neurophysiology of vision such as Granit, Grüsser and Creutzfeld, Lennox, Dodt and Enroth.

As might be expected, Piéron is very familiar with the findings of earlier workers in flicker and reports them adequately for the purposes in hand. These workers in their day were establishing the main facts and providing very general and approximate formulations expressing them. These workers were using the then known mechanisms that would seem to account for the facts. In the main the mechanisms had to do with photo-chemistry of the receptor process. The research was done in a day when visual neurophysiology was not known.

MORE recently, although photochemistry has been worked out much more in detail, the accumulation of neurophysiological data has brought about a significant and marked change in outlook on visual mechanisms. The use of this information has provided a way of accounting for many of the earlier overlooked or bypassed phenomena. Whereas the peripheral and central nervous systems were at first treated as mere conduction systems, their active role in the elaboration of the sensory end-result is now becoming increasingly recognized; fruitful conceptions and theories expressing this role are now quite in evidence.

It seems certain that, although Piéron mentions the work of neurophysiologists, he has not found a truly functional place for their findings. He still retains a kind of oversimplification in his expressed views regarding what it is that has to be explained and what it takes to explain it.

One of the prime problems dealt with, and truly a significant one, is the relation of the "light-dark" ratio (pulse-to-cycle fraction, PCF) and the production of the experience of uniform brightness produced by intermittent stimulation. For Piéron, the broad and major (simple) features of the function are the only ones that seem real or pertinent. Complexities are looked upon simply as artifacts. It does not seem important to him that more than one PCF will just eliminate flicker or just produce it (be critical), whereas Bartley, and later, Bartley and Nelson have produced data to show that PCF-intensity-CFF relations are not as earlier thought to be, and as they should be if only photo-chemistry were producing the quantitative pattern of the end-results. The explanation that these authors give and for which they produce corroborating evidence does not seem to reach Piéron. His conclusions seem to ride rough-shod over explanations utilizing the known facts of neuron-discharge, and it is difficult, from what he says, to see why workers in this area were mentioned at all.

The monograph up to the point of recognizing recent data which go beyond the old and in a way "conflict" with it, and up to the point of utilizing neurophysiological phenomena in accounting for sensory end-results is satisfactory. But from then on, nothing seems to come from Piéron's efforts to "synthesize."

Potentialities of Nervous Systems

V. G. Dethier and **Eliot Stellar**

Animal Behavior: Its Evolutionary and Neurological Basis. Englewood Cliffs, N. J.: Prentice-Hall, 1961. Pp. v + 118. $1.50.

Reviewed by NORMAN GINSBURG

Both authors, V. C. Dethier and Eliot Stellar are biotropes and both labor at the University of Pennsylvania, Dethier as Professor of Zoology and Stellar as Associate Professor of Psychology. Dr. Dethier is an authority on the behavior of the blowfly. Dr. Stellar is best known to psychologists in general for his collaboration with Clifford Morgan on Physiological Psychology *(1950). The reviewer, Norman Ginsburg, took his PhD at the University of Chicago, spent two years as a USPHS research fellow, two more at the New York Psychiatric Institute and then joined the psychology department at Roosevelt University. His research has brought him in contact, directly or indirectly, with the nervous systems of rats, pigeons, parakeets, myna birds and human beings.*

AS THE authors view it, "the study of animal behavior is . . . an analysis of the potentialities of the nervous system." About half of their little paperback is devoted to the structure and evolution of the nervous system; the other half is concerned with behavior itself. Such an apportionment inevitably leads to the question: are the treatments of neurology and behavior legitimately wedded to each other, or do they merely reside together between the same covers?

A cursory glance at the table of contents would suggest that the first half of the book traces the evolution of the nervous system, and the last three chapters finally settle down to talking about behavior. But this is far from the case. As each level is discussed, it is intimately related to the increasingly complex behavior.

For example, after the simple nervous system of Hydra is described with its

receptors, conductors in a net-like structure, and effectors, Hydra's feeding behavior is analyzed. Tiny harpoons are shot into the prey, which releases a chemical, glutathione, into the water. This stimulates receptor cells in the tentacles which in turn activate effector cells, thus flexing the tentacles. At the same time the glutathione stimulates sensory cells in the mouth, causing it to open in 'anticipation' of food. Thus what appears to be a nervously integrated behavior pattern turns out to be an aggregation of responses organized chemically.

The chapter on stereotyped behavior deals briefly but effectively with taxes (orientations and movements guided by stimulation), reflexes, instincts, and motivation. Stellar's hypothalmic model is used to tie together diverse evidence in regard to the control of drives. In discussing the hypothalamus, the authors bring in the evidence on how goal-oriented behavior (eating, drinking, sleeping, sex, emotion, and maternal) can be increased or decreased by electrical and chemical stimulation or ablation. This is supported by the findings from electrical recordings from these areas, and the reinforcing effects, positive and negative, of electrical stimulation.

In the learning chapter, the authors intend to "describe various kinds of learning . . . arrive at general laws of learning . . . see how the capacity to learn varies in phylogeny . . . (and) summarize what we know of the neurophysiological basis of learning." A big order for 19 pages! They are surprisingly successful, too.

Dethier and Stellar convey a sense of the continuity of the development of behavior from its simple unicellular beginnings to the staggering complexity permitted by the primate brain. At the same time they bring out the qualitative as well as quantitative changes that evolve in the course of phylogeny. Indeed, they caution us that "we need a converse of Lloyd Morgan's Canon that will warn against underestimating the capacity of animals with complex nervous systems on the basis of principles discovered in the study of simpler organisms."

The writing is simple and clear without being oversimplified. The many excellent drawings in the neurological part, while small, have all the detail they need and are well labeled. Where in the psychology curriculum does this volume best fit? There's too little detail for a course in comparative psychology, and the lack of primary references would be felt. However, I believe it would serve admirably as a supplementary reading in a biologically oriented introductory psychology course.

Light from Restored Sight

M. von Senden (Translated by Peter Heath)

Space and Sight: The Perception of Space and Shape in the Congenitally Blind before and after Operation. New York: Free Press of Glencoe, 1960. Pp. 348. $10.00.

Reviewed by WAYNE DENNIS

The author, M. von Senden, after serving for 26 years in the German Navy, entered the University of Kiel and received a 1930 D. Phil. degree, with psychology as his main subject. He first became interested in problems of the blind through his friendship at Kiel with Wilhelm Ahlmann a gifted and totally blind ex-cavalry officer who took degrees both in law and in psychology. Since World War II, von Senden has been managing a paint factory near Hamburg. The translator, Peter Heath, is a product of Magdalen College, Oxford University. He has been Lecturer at the University of Edinburgh and at St. Andrews. As of September 1962, he is Professor of Philosophy at the University of Virginia. The reviewer, Wayne Dennis, is Professor of Psychology and Chairman of the Department at Brooklyn College, where he has been off and on, since 1951. His most notable offs have been two periods as visiting professor at the American University at Beirut. As his readers know, he has a long and productive history of concern for developmental processes, including sensory and perceptual processes and the effects on these of early deprivation. Few of CP's *readers know, unless they have read the May 1962 issue of the journal (Pp. 182) about his role in the group paternity of* CP.

VON SENDEN published his *Raum- und Gestaltauffassung bei Operierten Blindgeborenen* in 1932. It did not enjoy a wide sale, and the publisher's remaining stock was destroyed by an air-raid on Leipzig in 1943. As a consequence of this event the book has been almost unattainable in recent years, although psychologists' interest in it has increased. The present English translation is therefore a welcome one. Aside from a new preface by von Senden and a few minor notes, it is unchanged from the original edition. The translation by Peter Heath of the University of St. Andrews, Scotland, is lucid and readable, and so far as the reviewer can judge, excellent in fidelity.

von Senden is interested primarily in cases of persons who are born with a cataractous condition of the lenses which causes "blindness," and who subsequently received various degrees of vision through removal of the lenses. While there were a few prior cases, the first case of this kind to receive attention from a psychological point of view was a 13-year-old boy operated on by Cheselden in 1728. Between that date and 1928 von Senden lists 65 cases reported in such a manner that each provides at least a small amount of data which may be of interest to psychologists.

Most of the cases reported by von Senden were operated on after they were six years of age, some as late as age 50.

Only a small number of reports of psychological interest have appeared since von Senden's book was first published. While von Senden's volume is

not entirely complete in its coverage to 1932, the addition of a few reports available before, and a few after, the date of his summary would not appreciably alter the value of his report.

ALTHOUGH reports of these cases provide valuable information, there are certain weakness in them. These weaknesses, which were appreciated by von Senden, are as follows.

While these patients are said to be congenitally blind, in many cases a doctor was not present at birth and the visual defect was noticed by untrained persons at various times after birth. The cataracts may have developed postnatally, or the opacity of the lenses could have increased considerably with age. In any case, cataractous lenses never totally exclude light, and hence these persons are not totally blind. All can distinguish light from dark and can locate, at least roughly, a source of bright light, such as the sun. Some may retain a moderate amount of pattern vision. von Senden attempts to identify the cases having an appreciable degree of pre-operative vision, but in many instances no careful assessment of pre-operative visual functioning was made.

The degree of post-operative vision also varies greatly from person to person, and frequently the degree of vision was not systematically determined. Most of the observations of the cases were made by the doctors who performed the operations. Naturally, their major interests were medical and humanitarian rather than psychological. Neither the topics on which psychological observations were made nor the testing procedures used are identical in any two cases, a circumstance which mitigates against a meaningful assembly of data.

Despite these difficulties psychologists have found values, and will continue to find it in these observations. The behaviors of congenital cataract cases, both before and after operation, are relevant to many psychological problems, not all of which are discussed by von Senden. His interest is centered in two major questions: (1) What is the nature of the space perception of blind persons? (2) How does visual space perception develop in the congenitally blind following a successful operation?

In the reviewer's opinion, von Senden's treatment of the first question is marred by semantic difficulties which he seems not to appreciate. He argues for the point of view that tactual awareness of space is not the same as visual awareness of space. No doubt this is true, but von Senden believes that the blind person has no genuine perception of space. He says (p. 66) that "if 'tactual space' is to have any meaning . . . a blind man . . . ought to be able to recognize his old tactual space in his new visual one." Apparently this view is axiomatic to von Senden. The evidence is clear that newly-operated congenital cataract cases who have been very deficient in pre-operative vision cannot immediately transfer the previous spatial knowledge to the visual world. Therefore von Senden concludes that tactual experiences do not produce a "true view" of "real space." But von Senden provides no adequate justification for accepting visual space as more true or real than other space. This partisanship for the primacy of visual space is the least convincing and least rewarding aspect of this book.

HOWEVER, most of von Senden's volume is devoted to a description of the development of visual perception following recovery from blindness. His review of progress in the perception of visual space will be of great interest to present-day psychologists. In contrast to his views of tactual space, von Senden's treatment of what might be called the construction of visual space is not doctrinaire. The empirical data provided by these cases are carefully reviewed. The data demonstrate the extensive effort which is required to gain even a modest mastery of the visual environment. In tracing the growth of visual mastery, von Senden includes among his topics the initial visual experiences, the perception of color and of shape, the perception of depth in various situations, including depth in pictures and paintings, and the development of visual memory images and visual fantasy.

von Senden's organization is by topical headings, rather than by cases. A consequence of this approach is that the material on each case is spread throughout the book. Since there are 65 cases, it is difficult for the reader to obtain a concrete view of any particular case.

von Senden suggests that a source book of the reports of the best-described cases would be valuable. The reviewer agrees. Such a source book would be of special value to those whose primary interests lie in areas the author does not treat. Among the current research areas which might find relevant data in the congenital cataract literature are those dealing with curiosity, exteroceptive reinforcement, the retention of the effects of early experiences, constancy of personality, and critical periods of development.

The reviewer offers the opinion that the increase in the availability on von Senden's survey will lead to a renewal of research on psychological aspects of congenital cataracts, a topic on which little research has been conducted in the past three decades.

Following Leadership Researchers

Luigi Petrullo and **Bernard M. Bass** (Eds.)

Leadership and Interpersonal Behavior. New York: Holt, Rinehart and Winston, 1961. Pp. xxxiv + 382. $6.50.

Reviewed by LEONARD BERKOWITZ

Both Luigi Petrullo and Bernard Bass have had a productive history of concern with leadership problems and related phenomena. Petrullo is the Petrullo of Petrullo and Tagiuri, the co-editors of the 1958 book Person Perception and Interpersonal Behavior (CP, *June 1960,* **5,** *192). He is also Head of the Group Psychology Branch of the Office of Naval Research. Bass's extensive research on leadership led to his 1960 book* Leadership Psychology and Organizational Behavior (CP, *May 1961,* **6,** *178). The reviewer, Leonard Berkowitz, wrote the present piece while he was Associate Professor of Psychology at the University of Wis-*

consin but he will read it in print as Professor. He received his PhD at Michigan where he learned about social psychology. His book Aggression: A Social Psychological Analysis *will have been published by McGraw-Hill by the time this review is printed.*

THE YEARS immediately following World War II found many social psychologists flushed with enthusiasm. Their field was bustling with activity, and no social problem seemed too difficult to overcome. Social psychology was promises, and its enthusiasts, implicitly at least, promised many things. Judging from the published research of the period, one of the promises most frequently made was to unravel the mysteries of effective leadership.

The present book, a collection of papers presented at the Office of Naval Research-Louisiana State University Symposium on Leadership in 1960, and edited by the head of the ONR Group Psychology Branch (Petrullo) and a Professor of Psychology at LSU (Bass), offers a good summary of the present status of leadership research. The early enthusiasm, based on insufficient knowledge and perhaps excessive ego-involvement in a discipline, has obviously been tempered. There is a greater appreciation of the complexities governing human behavior in social settings and, to a certain extent, even some agreement as to the optimal strategy for further research in this area.

As the volume shows, we cannot rely exclusively on studies of "real-life" leaders in natural situations. Frequently encountered essays dealing with such investigations too often contain only definitions, categories of behavior, and gross generalizations. Sometimes they even seem to contradict each other. Part of the problem can be traced to the difficulties inherent in correlational research, as is apparent, for example, in a comparison of the report by Fiedler with that of Likert. In an imaginative series of studies, Fiedler found that leaders actually in positions of influence tended to have relatively inefficient groups if they did not make fine conceptual differentiations between their most and least preferred co-workers. He maintains the absence of such differentiations indicates a "tendency to accept co-workers in a relatively uncritical and unreserved manner," implying that the ineffective leaders were too friendly and accepting. Yet in his summary of the results obtained by the Survey Research Center in over 25 investigations of organizational behavior, Likert contends that "employee-centered" supervisors, who are "supportive, friendly, and helpful," get higher productivity from their followers than do "job-centered" supervisors. Are the Fiedler and Likert observations at odds?

Clearly, controlled experiments are necessary to effect an adequate reconciliation of these seemingly contradictory contentions. To what extent are employee-centered supervisor attitudes the result rather than the cause of high productivity? Can Fiedler's findings be traced to other factors, such as anxiety, that accompany a low degree of conceptual differentiation? Experimental research is the procedure par excellence for answering such questions.

BUT SUCH research must be guided by theoretical analyses of some sort and, here too, the present book has something to offer. Indeed, the Petrullo-Bass collection offers a wide spectrum of theoretical approaches. Many of the papers in this group are relatively unhelpful (to the reviewer at least), consisting primarily of broad generalizations and/or general points of view rather than theories permitting specific predictions. Thus, Criswell describes sociometric studies of leadership, Roby presents a scheme for organizing executive functions in matrices, and Schultz contemplates what he regards to be the implications of psychoanalytic ego psychology ("A person is a group and a group is a person . . . the same laws hold for both levels"). Other conceptual models also are available. Provocative though some of these papers may be, their attempts at the construction of comprehensive theoretical superstructures generally leaves the reader with the feeling he is not anchored solidly to reality. We may gain more from less ambitious formulations combining specific hypotheses with empirical tests. Again, the present book offers a number of such reports. To cite a few, Havron and McGrath summarize some findings concerning the contribution of the leader to the effectiveness of military groups, Bronfenbrenner deals with familial antecedents of leadership and responsibility traits in adolescents, Guetzkow highlights some of the differences between laboratory groups developing stable hierarchical divisions of labor and other groups failing to become so organized, and Hollander discusses status differences in the freedom to be a nonconformist.

These latter reports are the most satisfying part of the volume. They contain findings and theoretical discussions which surely must be incorporated into any formula and/or review claiming to be comprehensive. But more than this, some of the papers demonstrate the vital role laboratory experiments can and will play in the development of precise theoretical propositions.

Hard Nosed Human Relations?

Eliot D. Chapple and **Leonard R. Sayles**

The Measure of Management: Designing Organizations for Human Effectiveness. New York: Macmillan, 1961. Pp. v + 218. $6.50.

Reviewed by LOUIS B. BARNES

Both Eliot D. Chapple, with a PhD, from Harvard, and Leonard R. Sayles, with a PhD from M.I.T., are Professors of Management at Columbia; Chapple also serves as president of E. D. Chapple Company, a management consulting firm in Darien, Connecticut. Also Dr. Chapple is the Chapple of Chapple and Coon who wrote Principles of Anthropology *in 1942. Dr. Sayles latest book,* Personnel: The Human Problems of Management, *was written in collaboration with George Strauss and appeared in 1960. Louis B. Barnes, the reviewer, is Assistant Professor at Harvard's Graduate School of Business Administration. He has been teaching Organizational*

Behavior in that school's Program for Management Development. In 1960 he published Organizational Systems and Engineering Groups *and in 1961, in collaboration with others,* Organizational Behavior and Administration.

IN EACH year's crop of behavioral science publications, most of us recognize an almost traditional "we're smarter than you were last year" flavor. "You," in the past has meant S-R theorists, industrial engineers, organizational planners, managers, or anything having to do with the Hawthorne studies. More recently, "you" represents those who once advocated human relations, inductive research, Gestalt psychology, interpersonal empathy, and even the relevance of the behavioral sciences for business practitioners.

Some of this behavioral science one-upsmanship, of course, is justified. However, some of it seems based upon weak ground within a framework of weaker logic. The Chapple-Sayles book unfortunately continues the tradition. The authors have written what the book jacket describes as a "controversial presentation" and "a strikingly new approach to work and the human problems of organization." This "new" approach is designed to tie together the organizational phenomena of technology, structure, and personality with the links provided by interactional behavior of individuals. Chapple and Sayles believe that industrial engineers have been concerned with technology, organizational theorists with organizational structure, and human relations experts with people, but no one has really taken a systems approach that keeps these three dimensions related. Consequently, the authors attempt to provide an integrative position, which treats interpersonal interaction as the crucial measure relating work flows between individuals to demands of each job within an organization structure and to individual personality traits.

The authors maintain that both individual personality and particular job requirements can be accurately described and measured through work sampling or interview procedures. Therefore, why not (a) build the science of organization upon a bedrock of such definable, measurable entities as these, and (b) stop worrying about individual feelings, intentions, or attitudes either as they exist or as management (prodded by the human relations experts) believes they should exist. They further contend that "conversion" attempts to change attitudes, feelings, etc. per se are difficult if not impossible in industry. They acknowledge the existence of attitudes and feelings, but not as entities that can be measured accurately, addressed directly, or changed by persuasion. Instead, Chapple and Sayles argue, change the job technology or organizational environment, and if that doesn't work, change the person to another job. Only then, they say, will the technological system and each individual's interactional requirements be jointly engineered in such a way that the individual is not forced into an organizational mold.

THE MEASURE OF MANAGEMENT is impressive as an industrial engineering approach to job and personality integration. It does not come through to this reviewer as the tested blueprint for an organizational science or as ready for present day application as Chapple and Sayles claim. The book's empirical data are limited to several very short case descriptions, and the reader has the impression of being oversold and underinformed. The authors might have helped both the book and the reader more if they had stated their propositions and presented more objective data to support them. A case in point is the material in the chapter summarizing Sayles' 1958 book, *Behavior in Work Groups.* The propositions are there, just as they were in 1958, but there is no greater sense of empirical support or research progress than there was in the earlier book. *The Measure of Management* would have provided an excellent vehicle for the authors to build upon that rough beginning by describing future research.

In addition, the new "integrative approach" in this book seems as polarized and oversimplified as the "extremist" (last year's) views the book attacks. In several cases, too, the attack seems aimed at strawman targets, e.g., there seems little basis for the statement that Elton Mayo "and his followers made the 'informal' a catchall for everything not on the organization chart" (p. 210). (The accusation seems even stranger in light of the studies by Mayo's associates and followers which are cited approvingly by Chapple and Sayles).

Nor would many teachers of organizational behavior agree to the Chapple-Sayles interpretation that "Most of the theories of human relations experts to accomplish change can be summarized in these principles: (1) one should try to persuade, not force changes on people, (2) one should get the other person's point of view and allow him to feel that he is contributing to the change, and (3) if you know why the individual is resisting change, you can change him, particularly if he also understands your point of view."

It is not the intent of the reviewer to detract from the very real contributions this book makes in highlighting interaction description and measurement as aids in research methodology. Nor are the present criticisms directed against integrative approaches to the scientific study of organizations. Instead, the intent here is to express regret that not much in the way of genuine and empirically supported integration exists in this book to help either the line manager or the student of organization evaluate its real merits.

We must never abandon the task of essential creation despite all the obstacles in the way. Our very difficulties may force a solution. The problem should not resolve itself to a choice between writing down to the mass audience or shunning it. The answers lie within the conscience, tenacity, fortitude and skill of individual artists. Each man must learn what he wishes to say and work very hard to say it in the manner most compatible with his spirit, taste and inclination.

—HAROLD CLURMAN

Children Develop and Texts Accumulate

Warren R. Baller and **Don C. Charles**

The Psychology of Human Growth and Development. New York: Holt, Rinehart and Winston, 1961. Pp. xvi + 432. $5.50.

Horace B. English

Dynamics of Child Development. New York: Holt, Rinehart and Winston, 1961. Pp. xvi + 461. $5.75.

Boyd R. McCandless

Children and Adolescents: Behavior and Development. New York: Holt, Rinehart and Winston, 1961. Pp. x + 521. $6.50.

Elizabeth Lee Vincent and **Phyllis C. Martin**

Human Psychological Development. New York: Ronald Press, 1961. Pp. vi + 522. $6.50.

Reviewed by GLEN HEATHERS

The two authors of the first book listed above are both Nebraska PhD's; Warren R. Baller is still at Nebraska as Professor of Educational Psychology; Don C. Charles moved on to become Associate Professor of Psychology at Iowa State College. The author of the second book, Horace B. English, is Professor of Educational Psychology at Ohio State University. In 1958 he produced with Ava C. English, A Comprehensive Dictionary of Psychological and Psychoanalytical Terms. *Boyd R. McCandless, author of the third book, is Research Professor and Director at the Iowa Child Welfare Research Station at the State University of Iowa. Both authors of the fourth book Elizabeth Lee Vincent and Phyllis C. Martin, profess at Chatham College in Pittsburgh and in Chatham's Department of Human Development and Behavior. An earlier product of their collaboration was* Human Biological Development *(1960). Glen Heathers, who was persuaded by* CP *to review all four books, is Professor of Education at New York University and Coordinator of the Experimental Teaching Center's Dual Progress Plan. He did his doctoral work with Hull at Yale, spent two years on the staff of the Social Science Research Council and another seven at the Fels Research Institute where he studied emotional dependence and independence. Currently he is directing studies on new ways of organizing instruction in public schools and he maintains an interest in independence, self direction and problem solving.*

IT HAS BEEN SAID that what a person gets out of a book depends largely upon what he puts into it. Considering the differences among these four texts in developmental psychology, it is evident that what is learned will depend as much on the text that is chosen as on the learner. Doubtless the biases of the professor whom the student inherits will continue to take precedence over the student's needs in the matter of text selection. Unfortunately, students must enter the educational lottery, pay their money, and take their chances.

The texts under review were written with different students and different purposes in mind. Vincent and Martin intend their book as an introduction to psychology for use in a general education course given freshmen and sophomores in liberal arts colleges. This volume, covering the life span from womb to tomb, offers a mighty sketchy presentation of research in developmental psychology. Discrete research findings are reported frequently, but the studies giving rise to these findings are never described.

The authors' attempts to explain aspects of development are illustrated by the uses they make of neural learning theory: "As nerve impulses pass again and again over the same synapses, or again and again fail to pass over the same synapses, *habits* of behavior, including habits of thinking, develop" (p. 259). It's that simple. The authors account for an adolescent boy's failure to replace his mother as the person selecting his clothing by explaining that " . . . it was more comfortable to keep the impulses going over the same old synapses than to force them over new ones" (p. 263). Certainly this volume is not a proper text for a first course in psychology.

In sharp contrast, McCandless offers the liberal arts student an account of psychological development that is solidly anchored in theory and buttressed with an extensive and careful review of research studies. He invites the student to think systematically about the process of child development, and to review the research studies that test major theoretical approaches to explaining development. McCandless does not treat childhood and adolescence separately except when discussing physical development. To undergraduates, this book should prove both illuminating and challenging, and graduate students in psychology doubtless will find it valuable as a reference work.

The text by Baller and Charles, and that by English, were written primarily for teachers, though English hopes that

his book will be useful also to parents. While Baller and Charles wish to provide teachers with a knowledge of child development that is "functional in school situations," they place the major stress on giving the student "an appreciation and understanding of research in education." Primarily, the book is a review of theory and research findings. Suggestions to teachers add a practical note.

English deliberately departs from the customary practice of reviewing developmental research, electing instead to treat developmental psychology as applied science or technology. His aim in this revision of his *Child Psychology* is to help the teacher and parent utilize principles and facts as guides to action in promoting child development. He makes clear that helping children develop requires an understanding of how and why they differ, rather than a set of "rules of thumb." For this reason, when discussing topics such as discipline and school achievement, he relies on principles of behavior, and on the research evidence supporting them. Throughout the book, English talks to teachers and parents in practical terms. He does not hesitate to offer a set of "earmarks of good discipline," or to suggest how to influence children's behavior through the judicious use of incentives.

THE DIFFERENCES among these texts invoke the question: What should a college student learn in an introductory course in psychological development? This reviewer's bias is that any student should be given a basis for understanding both stability and change in the individual's psychological make-up from one stage of development to another. This requires that he know the major aspects or problems of psychological development, the chief theoretical approaches to interpreting stability and change in psychological characteristics, and a sampling of important research findings bearing on the central problems of development. It is important that all students, including would-be practitioners with children, understand the psychologist's methods of studying development.

Admittedly, I am offering an idealized statement of criteria for texts in developmental psychology. Thus far, research tells us relatively little about how individuals develop. We have many cross-sectional studies that provide norms applying to groups of children of different age levels. We have a good many studies that test hypotheses about the effect of antecedent conditions on characteristics within groups of children. Only a few studies represent the longitudinal approach in which the development of particular individuals is traced from one stage of life to another. In consequence, any text that depends on research gives a highly generalized and inadequate account of individual development. The picture of the developing individual that emerges resembles a collage whose segments articulate poorly.

Especially striking is the near lack of research information on stability or continuity in psychological development. Each of the texts under review refers to the individual as a system characterized by continuity as well as change. Vincent and Martin boldy assert: "By adolescence, we develop a central *core of personality* which persists throughout our lives, and around which other later-developing peripheral traits cluster" (p. 313). They offer no evidence to support this claim. Baller and Charles were able to locate just six research studies bearing on the persistence of personality characteristics from one stage of life to another.

SINCE research offers neither an adequate description nor a valid explanation of individual development, it is not surprising that all four texts talk about development in general with only occasional references to individuals. The Vincent and Martin text is organized in terms of twelve developmental epochs. The remaining three texts follow a topical organization, with sections on physical development, intelligence, perception, emotion, motivation, social behavior, personality, etc.

In accounting for psychological development, each of these texts makes use of theoretical orientations related to maturation, learning, culture, and personality dynamics. The maturation hypothesis is employed in treating sensori-motor development, and the development of intelligence, motives, and emotions. The authors usually are careful to point out that maturation seldom acts alone. Learning and personality dynamics affect the uses and evaluation of physique, and the development and uses of intellect, motives, and emotions.

Fortunately, these texts are relatively free of the error of claiming that five-year-olds have similar traits, and that six-year-olds differ in consistent ways from five-year-olds. Major differences among individuals of any given age are recognized, though Vincent and Martin frequently drift toward the age-grading of personal-social characteristics *à la* Gesell.

Each of the texts treats psychological development mainly as a process of social learning. Vincent and Martin deal with this process on a descriptive level. They present family and culture as major influences on development, but do not discuss theories of socialization. McCandless offers an extensive exposition of socialization theory and research. He includes a detailed analysis of the effects of child-rearing practices, and has chapters on sex-typing and identification, authoritarianism and prejudice, and academic and personal growth at school. English has valuable chapters on "emotion as a social process," and on "influencing children's motives" through employing social incentives. Baller and Charles offer good chapters on the "social-cultural basis of behavior," socialization, peer relationships, child-family relationships, and teacher-pupil relationships.

ONE MIGHT expect an account of personality development to be the capstone of a text on developmental psychology. All of the volumes under review include a discussion of this topic. Considering that psychology is still at an early stage of grappling with the investigation of personality dynamics, it comes as no surprise that the authors' explanations of personality development are tenuous. In one chapter, English treats the development of sentiments and values, the hierarchy of motives,

Publication Manual

of the
American
Psychological
Association

1957 Revision

A revision of the 1952 Manual, detailed instructions are given for the preparation of scientific articles. Organization and presentation of tabular material, figures and graphs, and reference lists are included. All scientists who are writing for publicaton will find the Publication Manual an indispensable guide.

Price $1.00

Order from:

AMERICAN PSYCHOLOGICAL ASSOCIATION
Subscription Office
1333 Sixteenth Street, N.W.
Washington 6, D. C.

and the self-ideal. His chapter is almost entirely speculative. McCandless discusses the self-concept and reports research studies on factors influencing it, but does not approach a convincing account of how it develops. Baller and Charles express the faith that "continuity characterized man's behavior." Their failure to locate research evidence to document this faith leaves the matter at the level of conjecture.

Methods of intervening to redirect the course of development are given less space in these volumes than the subject deserves. English and McCandless briefly describe the theory and methods of child therapy. Both refer to the pioneering Iowa studies by Chittenden, Jack, Keister, and Page on changing children's social behavior through training programs. McCandless cites the results of a number of programs to rehabilitate delinquent or disturbed children as supporting the conviction that "human nature *can* be changed." These include the programs at the Wayne County Training School and the Hawthorne-Cedar Knolls School. Also, he points to the encouraging results Ojemann and his co-workers are obtaining in the Preventive Psychiatry Project at the Iowa Child Welfare Research Station. McCandless concludes: "Children's methods of reacting to frustration and failure, their ways of handling fear, and their aggressive behavior can be modified radically and constructively" (p. 440).

None of these texts offers a satisfactory introduction to research methods in child development. Vincent and Martin, in a section on the psychological aspects of puberty, use three pages to tell how psychologists study human behavior. Toward the middle of his text, English illustrates "the sort of fact-finding that underlies modern psychology" in an account of the Barker-Dembo-Lewin study of frustration and regression in young children. The texts by McCandless, and by Baller and Charles, each devote a chapter to methodology. Neither account tells the student much about how children may be studied. Instead, the emphasis is placed on general problems of research method.

It is regrettable that not one of the texts under discussion assumes that the student has had background course work in general psychology. The authors cope with the student's naiveté either by avoiding the issue or by attempting to supply the missing background knowledge. Vincent and Martin best illustrate the former solution, McCandless, the latter. Indeed, McCandless felt called upon to include two full chapters on general theory in learning and motivation.

The educational system is at fault in not requiring students to take psychology courses in proper sequence. No student, whether in a liberal arts college or a school of education, should be permitted to study child development until he has under his hat a working familiarity with the theory and methods of general psychology. The American Psychological Association might well take leadership in correcting the violations of course sequence that currently victimize textbook writers, professors, and students alike.

Fortunately, the authors of three of the texts being reviewed invite the student to go beyond the covers of the book. Vincent and Martin encourage students to observe children, view films, and do collateral reading. English reports that he is preparing a supplementary manual on methods of studying the individual child. Baller has edited a book of readings that reprints over fifty research studies in child development. These are worthy efforts in the direction of freeing the text-bound student.

A word of prophesy is in order. It may be predicted that these four texts are among the last that will be written as though a child grows, feels, strives, and learns, but seldom thinks. Our authors have given very little space to cognitive development. McCandless, and Baller and Charles, make no reference to Piaget's pioneering work on children's thinking. Vincent and Martin, and English mention Piaget a time or two. Today, problem-solving thinking and creative thinking are among the liveliest topics in psychological research. Tomorrow's texts in child development are bound to reflect this fact.

ON THE OTHER HAND

In this Department CP *invites discussion of reviews and of books reviewed. Here is the place for that kind of intellectual dissent that promotes progress in understanding. Let your criticism be* ad verbum, *not* ad hominem. *Seldom does a criticism merit more than half the space of the text criticized—never more than equal space and then only when the letter is interesting and well written.* CP *edits letters when it thinks they should be. Single-spaced letters will be returned for double-spacing.*

ALLEGED FOOLS AND KNAVES

My review of Prof. Bonner's *Psychology of Personality* contained four elements: 1) a view of his work as fitting into a recent emphasis on ego psychology, intellectual and creative competence, and cognitively-mediated proactive motivation; 2) a brief description of the theoretical position which Prof. Bonner elaborates; 3) some comments on the limitations of a theory which tends to confound intellectual values with personality dynamics such that the idealized personality is seen as the embodiment of time, place, and culture-specific social values, and 4) some negative comments on the way in which Prof. Bonner argues for his theory by implicit derogation of other viewpoints and their opponents. Some examples of the latter point:

P. 247. "We believe it is high time for those psychologists who scorn the concepts of the inner man, or the self, to divest themselves of the fiction of the self as some kind of homunculus embedded in the biosocial organism. We like to believe that even those who subscribe to the latter criticism do not believe that their fellow psychologists are so naive as to believe in mystical entities. It is often a pose which they assume in order to court the appelation of being scientific." [i.e., they are either fools or knaves.]

P. 345. "For this reason, many psychologists either lack interest in the subject or are too timid to investigate it."

P. 353. "Finally, it is very doubtful that the quantitative methods in psychology has contributed any truly fundamental ideas to the study of human behavior."

P. 420. "Underlying most investigations is the fallacious assumption regarding basic drives, a fallacy that characterizes most contemporary research on motivation."

P. 421. "Most psychologists are aware of the problem, but they do not always admit ignorance regarding it." [i.e., they are *both* fools and knaves.]

P. 517. "Even the learning theorist does not claim that learning goes on in a vacuum; but by ignoring the learner as a person, he unwittingly leads one to believe that it does."

While each of these points can be supported by argument, the effect of them all in a textbook is likely to convince a reader, correctly or not, that there is an attempt to make one's own light seem brighter by blowing out others' lamps. Such disparagement is not necessary for the support of the theory Prof. Bonner describes. Like Elliotson, his cause is worthy, but his method does that cause little good. Nevertheless, one could do worse than be compared with an innovator of Elliotson's vision and stature. A final note: The quote in my review describing Prof. Bonner's feelings about psychology's "deadening routine of repeating and recapitulating . . . the same impoverished views of man . . . . " was taken from a letter Prof. Bonner wrote in answer to my request for information about himself and his point of view that I could use in my review. In that letter, Prof. Bonner also indicated pleasure at my request, and suggested that if more reviewers would use such an approach, the ensuing reviews would be more just than they usually are. Thus the quote is Prof. Bonner's own summary of his orientation, and was written by him specifically for the review, although he could not have anticipated my reaction to his orientation or that I would find his description so apt a summary that I would quote it directly rather than paraphrase it. In any case, he need not be embarrassed to hold an opinion which is shared by many psychologists, who would therefore be sympathic to his book. On the other hand, neither does a reviewer need to feel embarrassed about his contrary opinions, once he has indicated what it is that he is arguing against.

JESSE E. GORDON
The University of Michigan

MENSH IRRELEVANT?

Mensh's review (*CP*, October 1961, 6, 376) of Kahn and Giffen's book, *Psychological Techniques in Diagnosis and Evaluation*, apparently covering only the index and front cover, seemed so lacking as to invite critical comment and a more adequate statement regarding the book itself.

In what seems to be a rather rare, if not peculiar, method of book reviewing, Mensh has precisely measured the index reference space of the various psychological instruments discussed in the book, and, on this basis, criticizes the author's allotment of space to the different tests. Since this is rather unsound and illogical procedure, and since the criticism seemed directed primarily toward the Kahn Test of Symbol Arrangement, it appears that Mensh's statements have nothing to do with the book itself. Indeed, if one cares to read the second paragraph in the preface (apparently Mensh did not), one will find the following:

"Since it has not been our purpose to prepare a textbook for use by professional psychologists, we have not attempted to mention all the various techniques in current use, nor to confine our illustrative materials to tests whose use is universally sanctioned on the basis of scientific validity. Instead, we have employed illustrative models that are: (1) well known and universally popular; (2) methods that we believe to be especially suitable for didactic purposes; and (3) tests in which we have a special competence because we have designed and developed them ourselves."

Thus Mensh's desire for a high correlation between index reference space and test popularity does not exactly parallel

the purpose of the book; his statements on this point consequently are irrelevant.

Mensh criticizes the book further on the basis of its color and the fact that a maze (2 X 3½, says Mensh) is found on the cover and mentioned only once in the book. Since the design and color of a book cover is the responsibility of the publisher, Mensh's criticism on this point is obviously irrelevant. It would be just as logical to criticize the maze itself for being too easy to solve.

While it is not within the scope of this letter to review fully the Kahn and Giffen book, a few remarks do seem warranted since Mensh did not in any way discuss the book in the light of its intended purpose.

Psychological Techniques in Diagnosis and Evaluation is a relatively short book in which the authors attempt, primarily by example rather than description, to present the clinical psychologists' approach to the evaluation of mental and intellectual disorders, and his use of tests in vocational and child guidance. The first two chapters deal with the role of psychology within the medical setting and introduce the concept of psychological testing. Within the following seven chapters, there are, in all, discussions of fifty-three different psychological tests and the type of information looked for in each as it pertains to various disorders. The extent to which the authors have presented in detail the expected performance of clinical groups on many diagnostic instruments, e.g., the ten Piotrowski signs of organicity on the Rorschach, neurotic signs on the KTSA and TAT, etc., is such that it seems to have gone somewhat beyond the book's intended purpose of orienting non-psychologists to psychological techniques. The amount of clinical material that is summarized in this book makes it a reference work ideally suited to the clinical intern or beginning psychologist, but may be more extensively detailed than necessary to satisfy the original purpose of the book.

LARRY K. HILL
USAF Hospital Lackland

BRAIN INJURY CLARIFIED

Dr. Sol Gordon, in the April, 1962 issue of *Contemporary Psychology*, takes exception to my alleged failure to distinguish mental retardation from brain injury. Dr. Gordon tends to reify the concepts *brain injury* and *mental retardation*. In fact, they are conceptualizations which have no independent substantive existence. Both may be thought of as groups of behavioral descriptions which are given names. One can define either as he will (as indeed has been done).

My basic objection to the concept of *brain injury*, as Dr. Gordon uses the term, is that it violates the general usage of the two words—*brain* and *injury*. He says, "Specifically the concept of brain injury refers mainly to those children who are not mentally retarded and do not exhibit gross motor or sensory disturbances. The fact is that many brain damaged children have verbal, but occasionally also full scale IQ's, within the normal range. However, virtually all brain injured children as we are defining them have areas of intellectual and behavioral adequacy co-existing with areas of retarded functioning." This is indeed a negative description, a definition by exclusion. He implies that certain *psychological* (italics his) evidence distinguishes the *behavior* (italics his) of the brain injured from the simply retarded.

What he is proposing is that a certain concatenation of behaviors and test patterning seem to have some reality. The evidence is obscure, and not ample, as he implies. That this behavioral complex (if it exists at all) is the result of injury to the brain is highly questionable.

Even more puzzling is the reservation of the term "brain injury" in such a way as to exclude the cerebral palsies and the many whose mental retardation stems from brain trauma or infection. One can postulate a large group who have suffered brain injury (an etiological statement) and then describe various consequences such as mental retardation, cerebral palsy, emotional liability, hyperactivity, etc. (behavioral descriptions), not necessarily mutually exclusive. Some of the brain injured may, indeed, be free from behavioral or psychological deviation.

Dr. Gordon is free to reject this usage. The professional community will make the ultimate decision on the basis of the best available evidence. Perhaps the temporary designation of the condition he describes, as "the Strauss syndrome," would be a compromise. I'm willing.

WILLIAM SLOAN
Austin State School

HOMINIZED AD VERBUM

Richards and Cline (*Contemp. Psychol.*, March 1962) express their concern over "the persistently hostile tone" of the review by Paul Meehl of our book *Clinical Inference and Cognitive Theory*. (*CP*, Nov. 1961, 6, 389-391) As authors of the book, our concern is not so much whether the review directs hostility against us as people or simply as writers of the book; we are more concerned about the fact that it provides a grossly unbalanced coverage of the subject matter of the book and a misleading representation of the content in those sections which were criticized. (These comments would have been submitted sooner had not the three authors all been on the move at the time in which the review appeared.)

To copy the style of the reviewer's "*hominized ad verbums*" (quoting Boring), is the reviewer really unaware that he is under some obligation to give the readers a picture of what topics are dealt with in the book and of what interests may be served by it? Our book *is* being used currently by students and scholars for its treatment of several topics other than the ones mentioned by the reviewer; surely a balanced review would have given some hint that there are sections in the book that psychologists might find valuable for their own reading or for teaching purposes without being "retrogressive" in their approach to the topic. Apart from its treatment of the logic of clinical inference, we know that it is being used as a source book for its treatment of cognitive theory and its history, for its approach to the analysis of cognitive structures, for the study of the variables involved in judgments about people and for its discussion of the validity of such judgments.

We readily acknowledge that the approach which we adopt to the logic and validity of clinical inference owes a great deal to Meehl's own magnificent pioneering analysis (in *Clinical versus Statistical Prediction*, Minnesota, 1954), but we have considerably extended the analysis and have critically discussed the treatment of the creative act in clinical inference. The review does not give credit for the part of our model that accords with Meehl's, nor does it attempt to give even a brief description of the extensions which we have made in the theory. Whether or not Richards and Cline are right in regarding Meehl's review of our book as an *ad hominum* critique, it certainly betrays an irritable, didactic tone

that seems to explain part of the misrepresentation. Most of the specific arguments are too pedantic to be debated in this forum, but our case for the claim that the review is biased can be supported by some examples.

Review: "The anti-psychoanalytic bias of the book . . . [which] . . . indexes Meehl's name 19 times . . . but Freud's only twice."

Text: There are three references to Freud (one, p. 182, accidentally omitted from the index), and all of them quote the work of this scholar, without disapproval, in support of the relevant point. In view of the orientation of the book, does it really show bias that we referred more often to Meehl than to Freud? So also did the review! Meehl's book on clinical inference of 1954 cites Freud only *once* but we see nothing particularly important in that fact.

Review: "They dispose of . . . creative hypothesis-formation" and "all non-syllogistic inference except enumerative 'induction' is labeled 'non-inductive' and considered fallacious."

Text: (p. 81) "what appears as a creative act in clinical hypothesizing is the activation of a premise (not necessarily achieved inductively)." The point is made, p. 80, that creative acts derive from postulates that spring from such non-inductive sources as analogy, *construction*, and the acceptance of statements from authority figures. We point out that the freedom to *construct* major premises implies an obligation for justifying the premises, which is equivalent to saying that the hypothetical confirmation cycle has its place in clinical inference. This is re-affirmed quite positively on p. 265.

Review: "The book . . . rationalizes its simplistic treatment of the clinician as knower." " . . . ignoring the really interesting cases of personalistic inference."

In the book, on pp. 77-80 and 188, attempts are made to deal with two "interesting" cases from clinical practice based on protocols quoted in detail by Meehl in his own book. In both instances we attempt to simplify the complex material in order to reduce it to a form in which the cognitive activity of clinicians can be treated as an example of a generalizable principle. This surely is the legitimate "simplistic" or "reductionist" bias of all scientific endeavor that aims at explanation rather than mere verbal description.

Enough of this distasteful task of illustrating the contention that this book review has gone beyond the usually accepted bounds of criticism. As authors we can see the justification for a few of the critical points made, but are disappointed by what seems to us the hostile context in which they are set. We hope that *Contemp. Psychol.* will consider possible procedural measures, such as having a reader for each review, to make less likely the promulgation of the more extreme forms of idiosyncrasy.

THEODORE R. SARBIN
University of California

RONALD TAFT
University of Western Australia

DANIEL E. BAILEY
University of Colorado

Books Received

ACKOFF, RUSSELL L., with the collaboration of SHIV K. GUPTA and J. SAYER MINAS. *Scientific method: optimizing applied research decisions.* New York: Wiley, 1962. Pp. vii + 464. $10.25.

ALEXANDER, ARTHUR (Illustrations by ZENOWIF ONYSHKEWYCH). *The hidden you: psychology in your life.* Englewood Cliffs, N.J.: Prentice-Hall, 1962. Pp. 63. $2.95.

ALEXANDER, FRANZ. *The scope of psychoanalysis: selected papers, 1921-1961.* New York: Basic Books, 1962. Pp. xix + 594. $12.50.

ALLISON, R. S. *The senile brain: a clinical study.* Baltimore: Williams & Wilkins, 1962. Pp. vi + 288. $10.00.

AVICENNE. Edited and translated by JÁN BAKOS. *D'après son oeuvre AsSifa'.* Prague, Czechoslovakia: Éditions De L'Académie Tchecoslovaque Des Sciences, 1956. Pp. ix + 245. (One volume in Arabic and one in French.)

BALINT, MICHAEL & ENID. *Psychotherapeutic techniques in medicine.* Springfield, Ill.: Charles C Thomas, 1962. Pp. xiv + 236.

BALLER, WARREN R. *Readings in the psychology of human growth and development.* New York: Holt, Rinehart and Winston, 1962. Pp. xiv + 689. $4.75.

BEAL, GEORGE M., JOE M. BOHLEN, & J. NEIL RAUDABAUGH. *Leadership and dynamic group action.* Ames, Iowa: Iowa State University Press, 1962. Pp. 365. $6.00.

BELLOWS, ROGER, THOMAS Q. GILSON, & GEORGE S. ODIORNE. *Executive skills: their dynamics and development.* Englewood Cliffs, N.J.: Prentice-Hall, 1962. Pp. viii + 334. $10.00.

BERG, CHARLES. *Madkind: the origin and development of the mind.* London: George Allen & Unwin, 1962. Pp. 277. 36s net.

BETTELHEIM, BRUNO. *Dialogues with mothers.* New York: Free Press of Glencoe, 1962. Pp. 216. $3.50.

BLAINE, GRAHAM B. *Patience and fortitude: the parents' guide to adolescence.* Boston: Little, Brown, 1962. Pp. xiii + 260. $4.75.

BLOOD, ROBERT O., JR. *Marriage.* New York: Free Press of Glencoe, 1962. Pp. xix + 515. $6.00.

BORKO, HAROLD (Ed.). *Computer applications in the behavioral sciences: the role of the computer as a research tool in the behavioral sciences.* Englewood Cliffs, N.J.: Prentice-Hall, 1962. Pp. 633. $8.75.

BRYAN, WILLIAM J., JR. (Forewords by S. J. VAN PELT, MELVIN BELLI, & AL MATTHEWS). *Legal aspects of hypnosis.* Springfield, Ill.: Charles C Thomas, 1962. Pp. xx + 282. $10.50.

CHAFETZ, MORRIS E. & HAROLD W. DEMONE, JR. (Forward by HARRY C. SOLOMON). *Alcoholism and society.* New York: Oxford University Press, 1962. Pp. 319. $6.95.

CHRISTENSON, REO M. & ROBERT O. MCWILLIAMS. *Voice of the people: readings in public opinion and propaganda.* New York: McGraw-Hill, 1962. Pp. ix + 585. $4.95.

CLARK, BURTON R. *Educating the expert society.* San Francisco: Chandler, 1962. Pp. vii + 301. $2.75.

DIEL, PAUL (Préface by HENRI WALLON). *Psychologie de la motivation: théorie et application thérapeutique:* 2nd edition. Paris: Presses Universitaries de France, 1962. Pp. 323. N.F. 12 + T.L.

DIESING, PAUL. *Reason in society: five types of decisions and their social conditions.* Urbana, Ill.: University of Illinois Press, 1962. Pp. 262. $5.75.

DUROST, WALTER N. & GEORGE A. PRESCOTT. *Essentials of measurement for teachers.* New York: Harcourt, Brace & World, 1962. Pp. vii + 167.

FOUNDATION FOR RESEARCH ON HUMAN BEHAVIOR. *Psychological research on consumer behavior.* Ann Arbor, Mich.:

Foundation for Research on Human Behavior, 1962. Pp. i + 74. $2.00.

FREUD, SIGMUND. (Translated by JAMES STRACHEY). *Civilization and its discontents.* New York: Norton, 1962. Pp. 112. $3.75.

GAGNÉ, ROBERT M. (Ed.) and others. (Foreword by ARTHUR W. MELTON). *Psychological principles in system development.* New York: Holt, Rinehart & Winston, 1962. Pp. v + 560. $9.00.

GARRETT, JAMES F. & EDNA S. LEVINE (Eds.). *Psychological practices with the physically disabled.* New York: Columbia University Press, 1962. Pp. xi + 463. $8.75.

HARRIS, ALBERT J. *Effective teaching of reading.* New York: David McKay, 1962. Pp. x + 387. $5.00.

HOCH, PAUL H. & JOSEPH ZUBIN (Eds.). *The future of psychiatry.* New York: Grune & Stratton, 1962. Pp. xii + 271. $8.75.

HOMANS, GEORGE CASPAR. *Sentiments and activities: essays in social science.* New York: Free Press of Glencoe, 1962. Pp. 326. $6.50.

JAYNE, WALTER ADDISON. *The healing* gods of ancient civilizations. New Hyde Park, N.Y.: University Books, Inc., 1962. Pp. xxi + 569. $10.00.

JUNG, C. G. *Symbols of transformation: an analysis of the prelude to a case of schizophrenia. Vol. I & II.* New York: Harper, 1962. Pp. xxix + lxiv + 557. $2.25 each.

KATONA, GEORGE, CHARLES A. LININGER, JAMES N. MORGAN, & EVA MUELLER. *1961 Survey of consumer finances.* Ann Arbor: University of Michigan, Institute for Social Research, 1962. Pp. xv + 150.

KELLEY, EARL C. *In defense of youth.* Englewood Cliffs, N.J.: Prentice-Hall, 1962. Pp. viii + 145. $1.95.

KLEIST, KARL. (Translated by F. J. Fish & J. B. Stanton). *Sensory aphasia and amusia: the myeloarchitectonic basis.* New York: Pergamon Press, 1962. Pp. vii + 95. $5.00.

KORNHAUSER, WILLIAM, with the assistance of WARREN O. HAGSTROM. *Scientists in industry: conflict and accomodation.* Berkeley, Calif.: University of California Press, 1962. Pp. xii + 230. $6.00.

LICHTER, SOLOMON O., ELSIE B. RAPIEN, FRANCES M. SEIBERT, & MORRIS A. SKLANSKY. *The drop-outs: a treatment study of intellectually capable students who drop out of high school.* New York: Free Press of Glencoe, 1962. Pp. xiii + 302. $5.50.

MARTINEAU, HARRIET (Edited by SEYMOUR MARTIN LIPSET). *Society in America.* New York: Doubleday, 1962. Pp. 357. $1.25.

NIELSEN, GERHARD S. (Gen. Ed.). *Proceedings of the XIV International Congress of Applied Psychology: Vol. I: Psychology and international affairs: can we contribute?, Vol. II: Personality research. Vol. III: Child and education, Vol. IV: Clinical psychology, Vol. V: Industrial and business psychology.* Copenhagen: Munksgaard, 1962. Pp. 132, 229, 197, 211, 229.

PAP, ARTHUR. *An introduction to the philosophy of science.* New York: Free Press of Glencoe, 1962. Pp. xiii + 444. $7.50.

ROBINSON, FRANCIS P. *Effective reading.* New York: Harper, 1962. Pp. vii + 94. $1.35.

ROSENBLITH, JUDY F. & WESLEY ALLINSMITH. *The causes of behavior: readings in child development and educational psychology.* Boston: Allyn & Bacon, 1962. Pp. v + 514. $6.50.

RUITENBEEK, HENDRIK M. (Ed.). *Psychoanalysis and existential philosophy: a group of articles that analyze the important influence of existentialism on modern psychoanalysis.* New York: Dutton, 1962. Pp. xxvi + 262. $1.75.

RUITENBEEK, HENDRIK M. (Ed.). *Psychoanalysis and social science: eleven essays which explore the close integration of psychoanalysis and the social sciences in America.* New York: Dutton, 1962. Pp. xxvii + 226. $1.65.

RUSALEM, HERBERT. *Guiding the physically handicapped college student.* (MAURICE H. FOURACRE (Ed.), TC Series in Special Education). New York: Teachers College, Columbia University, 1962. Pp. v + 151. $2.75.

SCHAEFER, KARL E. (Ed.). *Environmental effects on consciousness.* New York: Macmillan, 1962. Pp. ix + 146. $5.50.

SCHNEIDER, NORMAN. *Hypnotism and you: an essay on the theory and practice of the hypnotic art.* New York: Exposition Press, 1962. Pp. 77. $2.50.

SIEGEL, BERNARD J. (Ed.). *Biennial review of anthropology 1961.* Stanford, Calif.: Stanford University Press, 1962. Pp. 338. $7.50.

SMITH, G. MILTON. *A simplified guide to statistics for psychology and education, 3rd edition.* New York: Holt, Rinehart & Winston, 1962. Pp. vii + 164. $1.75.

SPARKS, LAURANCE. *Self-hypnosis: a condition-response technique.* New York: Grune & Stratton, 1962. Pp. xiii + 255. $5.75.

THOMPSON, GEORGE G. *Child Psychology: growth trends in psychological adjustment.* Boston: Houghton Mifflin, 1962. Pp. xxi + 714. $7.75.

WALLAS, GRAHAM. *Human nature in politics.* Lincoln, Neb.: University of Nebraska Press, 1962. Pp. 313. $1.40.

WARFEL, HARRY R. *Language: a science of human behavior.* Cleveland, Ohio: Howard Allen, Inc., 1962. Pp. viii + 188. $3.95.

WATTS, ALAN W. (Forewords by TIMOTHY LEARY & RICHARD ALPERT). *The joyous cosmology: adventures in the chemistry of consciousness.* New York: Pantheon Books, 1962. Pp. xix + 94. $5.00.

WESTON, H. C. *Sight light and work.* (2nd ed. of Sight Light and Efficiency). London: H. K. Lewis & Co., Ltd., 1962. Pp. xii + 284. Pounds 3.5.0. net.

WYSS, DIETER. *Die tiefenpsychologischen Schulen von den Anfängen bis zur Gegenwart: Entwicklung, Probleme, Krisen.* Göttingen, Germany: Vandenhoeck & Ruprecht, 1962. Pp. xxxi + 412. Lw DM 32,-.

In the interests of renown the forwardness should lie chiefly in capacity to handle things. Successful propagandists have succeeded because the doctrine they bring into form is that which their listeners have for some time felt without being able to shape. A man who advocates aesthetic effort and deprecates social effort is only likely to be understood by a class to which social effort has become a stale matter. To argue upon the possibility of culture before luxury to the bucolic world may be to argue truly, but it is an attempt to disturb a sequence to which humanity has been long accustomed.

—THOMAS HARDY
Return of the Native

AMERICA'S PSYCHOLOGISTS

A Survey of a Growing Profession

KENNETH E. CLARK

University of Colorado

A report on a three-year study of American Psychologists, sponsored by the Policy and Planning Board of the American Psychological Association and the National Science Foundation. The volume presents a view of a growing profession in the mid-twentieth century by describing the people active in psychology.

$1.00

Order from

American Psychological Association, Inc.

1333 Sixteenth Street, N. W.

Washington 6, D. C.

GRADUATE EDUCATION IN PSYCHOLOGY

Report of the Conference on Graduate Education in Psychology, sponsored by the Education and Training Board of the American Psychological Association and supported by a grant from the National Institute of Mental Health, U. S. Public Health Service; held at Miami Beach, Florida, November 29 to December 7, 1958

Prepared by the Editorial Committee:
Anne Roe, *Chairman*,
and
John W. Gustad, Bruce V. Moore,
Sherman Ross, and Marie Skodak

Price $1.50

THE AMERICAN PSYCHOLOGICAL ASSOCIATION
Dept. Grad
1333 Sixteenth Street, N.W.
Washington 6, D. C.